

New larval food plant associations for some butterflies and diurnal moths (Lepidoptera) from the Northern Territory and eastern Kimberley, Australia

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ABSTRACT

This paper documents 122 insect-plant associations for 10 families of butterflies/diurnal moths (Castniidae, Sessidae, Immidae, Geometridae, Hesperidae, Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Noctuidae (Agaristinae)) from the Northern Territory and eastern Kimberley, of which 76 associations are newly recorded for Australia and 46 are newly recorded for the Northern Territory and/or Western Australia. Of particular note are the first recordings of the families Lecythidaceae for *Anthene* (Lycaenidae), Santalaceae for *Theclinesstes* (Lycaenidae), Vitaceae and Rubiaceae for *Periopta* (Agaristinae), and Vitaceae for *Radinocera* (Agaristinae). For *Cephrenes augiades* and *Borbo impar* (Hesperidae), the native larval food plants and natural breeding habitats in the Northern Territory are documented for the first time. For *Candalides delospila*, *C. erinus* and *C. geminus* (Lycaenidae), errors in previously reported larval food plants are corrected, and for two of these species (*C. delospila*, *C. erinus*) facultative ant associations are recorded for larvae for the first time. New attendant ant associations are also recorded for several lycaenids, notably *Ogyris zosine* and *Theclinesstes miskini*, in which the larvae have obligate relationships with ants.

KEYWORDS: butterfly, day-flying moth, insect-plant associations, larval food plant, Lepidoptera.

INTRODUCTION

The following catalogue of larval food plants for butterflies and day-flying moths is based on field observations and rearing of the early stages from the central arid zone and the 'Top End' of the Northern Territory (NT) and the eastern Kimberley of Western Australia (WA) by the author during the five year period, October 2005 to December 2010. The eastern Kimberley region extends from Pinkerton Range-Spirit Hills, NT, to north-western WA. The Lepidoptera covered here include the Castniidae, Sessidae, Immidae, Geometridae, Hesperidae, Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Noctuidae (Agaristinae). The new records are in addition to those reported in the review by Meyer (1996) for part of the region, and contribute to the growing body of knowledge of insect-plant associations for the Australian Lepidoptera as a whole (see Common 1990; Braby 2000 for review).

The catalogue is presented in annotated form for each association: the (scientific and common) name of the lepidopteran appears first as a subheading in bold, followed by the larval food plant and voucher number, and then the relevant field observations. The field observations summarise details of locality, date, early stages and, in some cases, rearing data and other biological notes (e.g. attendant

ants for Lycaenidae) where these are poorly documented. The new Lepidoptera-larval food plant associations are arranged into two groups; firstly, those that comprise new records for Australia as a whole, and secondly, those that are new for the NT and/or WA. In many cases, samples of the early stages of Lepidoptera were preserved, photographed and/or reared to adulthood in captivity to confirm species level identification, and vouchers of these specimens are lodged in the Museum and Art Gallery of the Northern Territory, Darwin (NTM) or the Australian National Insect Collection, Canberra (ANIC). In some cases, however, the early stages were not reared, and identifications of eggs, larvae or pupae were determined on the author's field experience and knowledge of the relevant species.

Nomenclature for butterflies follows Braby (2010), while that for moths follows Nielsen *et al.* (1996). The ants were identified by Alan Anderson. Voucher specimens of the ants have been lodged in the CSIRO Tropical Ecosystem Research Collection, Darwin. Botanical nomenclature follows a recent updated checklist of vascular plants published by the Northern Territory Herbarium (Short *et al.* 2011). Voucher numbers refer to plant specimens lodged in the Northern Territory Herbarium, Palmerston (DNA). Introduced, naturalised and ornamental plants are designated by an asterisk (*). For consistency, geocoordinates are given

in, or have been converted to, decimal degrees, followed by datum (e.g. AGD66, WGS84 or GDA94). The level of precision of coordinates is not given, though in general the spatial area of sites sampled varied from 10–500 m radius, though was usually about 50–100 m.

NEW LEPIDOPTERA LARVAL FOOD PLANT ASSOCIATIONS FOR AUSTRALIA

The following catalogue of species comprises plants that, to the author's knowledge, have not previously been documented as larval food plants for Australian Lepidoptera.

CASTNIIDAE

Synemon phaeoptila Turncr, 1906. No common name.
Chrysopogon latifolius S.T.Blake (Poaceae). (vouchers M.F. Braby 19, 31, DNA).

Caiman Creek, Cobourg Peninsula, NT (11.22504°S, 132.20236°E; WGS84), 4 February 2007, M.F. Braby & V. Kessner. Several females were observed at 1215–1245 hr ovipositing on *Chrysopogon latifolius* growing in savannah woodland that was regenerating after fire; numerous eggs were laid in soil at the base of thick stems/rhizomes of *C. latifolius*.

Victoria Hwy, Pinkerton Range, NT (15.98698°S, 129.51213°E; WGS84), 1 February 2008, M.F. Braby & V. Kessner. Two empty pupal exuviae were collected protruding from soil at the base of separate tussocks of *C. latifolius* growing in savannah woodland on flat low-lying terrain adjacent to a sandstone outcrop; four pairs of adults were also collected mating around midday as they sat in copula on these and other nearby tussocks of *C. latifolius*. Two of the females had almost certainly emerged from the pupal exuviae.

Synemon sp. 'Roper River'. No common name.
Chrysopogon fallax S.T.Blake. (Poaceae). (voucher M.F. Braby 51, DNA).

Nathan River Ranger Station, Limmen National Park, NT (15.57681°S, 135.42783°E; WGS84), 14 May 2009, M.F. Braby & N. Collier. Four pupal exuviae were collected protruding from soil close to clumps of *Chrysopogon fallax* growing in grassy open woodland on flat terrain in a valley between sandstone ridges/outcrops; one freshly emerged female was also collected at rest drying its wings within a clump of *C. fallax*. The habitat had been extensively burnt three days earlier.

SESIIDAE

Pseudoesia oberthuri (Le Cerf, 1916). No common name.
Ampelocissus acetosa (F.Muell.) Planch. (Vitaceae). (not vouchered).

Lee Point, Casuarina Coastal Reserve, NT (12.33166°S, 130.89444°E; WGS84), 28 March 2009, M.F. Braby & A. Kallies. Numerous larvae and pupae were collected from

within the main stem of several vines of *Ampelocissus acetosa*, which grew in eucalypt open forest, and reared to adult in captivity.

East Point, Darwin, NT (12.41140°S, 130.82500°E; WGS84), 31 January 2010, M.F. Braby. One pupal exuvia was collected protruding from the stem of *A. acetosa* growing about 1.5 m distant from where a freshly emerged male was perched, at 1055 hr, on a large leaf of a vine growing along the edge of coastal semi-deciduous monsoon vine-thicket.

Ampelocissus frutescens Jackes. (Vitaceae). (not vouchered).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 11 April 2009, M.F. Braby & L.J. Aitchison. Numerous larvae were collected from within the stem of a single shrub of *Ampelocissus frutescens* which had not yet shed its leaves and which was growing at the base of a hill; several larvae were reared to adult in captivity. Most of the other short-lived aerial stems of this perennial vine were already senescent following onset of the dry season, suggesting that *A. frutescens* may not be a widely used food plant.

IMMIDAE

Birhana cleis (R. Felder & Rogenhofer, 1875). No common name.

Dendrophthoe odontocalyx (F.Muell. ex Benth.) Tiegh. (Loranthaceae). (voucher M.F. Braby 29, DNA).

Gurrumuru outstation, Gove Peninsula, NT (12.59302°S, 136.23194°E; WGS84), 21 June 2007, M.F. Braby. A cohort of 15 early instar larvae was recorded on a leaf of *Dendrophthoe odontocalyx*, a mistletoe parasitising the host tree *Grevillea pteridifolia* growing in savannah woodland; three larvae were reared to adult in captivity. The remains of an old cohort of *Delias argenthona* were evident on the same mistletoe clump (see below).

HESPERIIDAE

Boebo iupar laviuia (Waterhouse, 1932). Yellow Swift.
Hymenachne acutigluma (Steud.) Gilliland. (Poaceae). (voucher M.F. Braby 41, DNA).

Yellow Water, Jim Jim Creek, Kakadu National Park, NT (12.89689°S, 132.51749°E; WGS84), 20 April 2008, M.F. Braby, K. Nishida & L.J. Aitchison. Numerous larval shelters and adults were recorded on *Hymenachne acutigluma* growing in standing water of floodplain wetland. The site was revisited on 8 June 2008 and one mid-instar larva was collected from *H. acutigluma*.

Taractrocer a iua Waterhouse, 1932. No-brand Grass-dart.

Cymbopogon procernis (R.Br.) Domin. (Poaceae). (voucher M.F. Braby 3, DNA).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 6 May 2006, M.F. Braby & D.A. Young. One late instar larva was collected

from within its shelter on *Cymbopogon procerus* growing in low woodland at the summit of a rocky hill; the larva was subsequently reared to adult in captivity. The site was revisited on 6 March 2010 and two larvae were collected from *C. procerus*; one developed directly and was reared to adult in captivity within a few weeks, the other remained dormant as a final instar and did not feed for six months until it was removed by hand from its shelter.

Sorghum sp. (Poaceae). (not vouchered).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 6 March 2010, M.F. Braby & S. Keates. Two larvae were collected from within their shelters on *Sorghum* sp., an annual grass growing in savannah woodland on the lower slope; one larva developed directly and was reared to adult in captivity within a few weeks, the other remained dormant as a final instar and did not feed for many months.

Sorghum macrospermum E.D.Garber. (Poaceae). (not vouchered).

Stuart Hwy, 10 km NW of Katherine, NT (14.40684°S, 132.19710°E; WGS84), 26 January 2009, M.F. Braby & V. Kessner. Six larvae were collected from within loose shelters on new growth of *Sorghum macrospermum* growing in degraded mixed vine-thicket-woodland on limestone; four larvae were reared to adult in captivity. *Sorghum macrospermum* is a localised annual grass endemic to the Katherine district (Lazarides *et al.* 1991).

Stuiana lascivia larrakia L.E. Couchman, 1951. **Dark Grass-dart.**

Ischaenum australe R.Br. (Poaceae). (voucher M.F. Braby 60, DNA).

El Questro Gorge, El Questro Wilderness Park, WA (16.02135°S, 128.02356°E; WGS84), 14 July 2009, M.F. Braby. A female was observed at 1050 hr depositing a single egg on a broad fresh blade of *Ischaenum australe*, which grew as a dense understorey grass along the edge of a creek. Adults were locally common at the site where *I. australe* grew in sunlit areas.

Telicota colou argea (Plötz, 1883). **Pale-orange Darter.**

**Paspalum scrobiculatum* L. (Poaceae). (voucher M.F. Braby 77, DNA).

Fogg Dam Conservation Reserve, NT (12.55769°S, 131.29701°E; WGS84), 29 May 2010, M.F. Braby, S. Keates & D. Bisa. One mid-instar larva was collected from within its shelter on *Paspalum scrobiculatum* growing in paperbark swampland and reared to the pupal stage.

Cephereus anguades (C. Felder, 1860) ssp. 'Top End' (M.F. Braby 354, ANIC). **Orange Palm-dart.**

Carpentaria acuminata (H.Wendl. & Drude) S.T.Blake (Arecaceae). (not vouchered).

Greenant Creek, Litchfield National Park, NT (13.20015°S, 130.69971°E; WGS84), 6 November 2010, M.F. Braby. A pupa was collected from within its shelter on *Carpentaria acuminata* growing in riparian wet monsoon

forest, and a male emerged the following morning; males were commonly recorded between 1500 hr and 1600 hr as they perched on foliage of understorey trees 7–8 m above the ground in sunlit patches along the edge of the habitat where they appeared to establish mating territories.

Wangi Falls, Litchfield National Park, NT (13.16305°S, 130.68166°E; WGS84), 7 November 2010, M.F. Braby & L.J. Aitchison. One late instar larva was collected from within its shelter on *C. acuminata* growing abundantly in wet monsoon forest; the larva was reared to adult in captivity. A female of this hesperiid was previously recorded at this location on 17 April 2006, but the larval food plant was not determined.

Robin Falls, creek upstream of falls, NT (13.34877°S, 131.12622°E; WGS84), 29–30 April 2011, M.F. Braby & J.J. Armstrong. Three larvae were collected from within shelters on *C. acuminata* growing in riparian evergreen monsoon forest below a sandstone escarpment, one of which was reared to adult in captivity. Males were commonly recorded during mid-afternoon (1530–1600 hr) establishing territories in the mid-canopy along the western edge of the breeding habitat that received direct sunlight.

Cephereus trichopepla (Lower, 1908). **Yellow Palm-dart.**

Livistona humilis R.Br. (Arecaceae). (not vouchered).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 21 February 2009, M.F. Braby & D.A. Young. A female was observed ovipositing on *Livistona humilis* growing in low woodland at the summit of a rocky hill. The site was revisited on 21 November 2009 and a late instar larva close to the prepupal stage was recorded within its shelter on *L. humilis* growing on the slope of a hill. On 6 March 2010 another larva in early instar was recorded on *L. humilis* growing at the summit of the hill.

Livistona mariae F.Muell. (Arecaceae). (not vouchered).

Palm Valley, Finke Gorge National Park, NT (24.03333°S, 132.69528°E; WGS84), 13 October 2005, M.F. Braby & L.J. Aitchison. Several early instar larvae were recorded from within their shelters on small individuals of *Livistona mariae* growing along Palm Creek; one female was reared to adult in captivity.

Livistona nasmophila Dowe & D.L.Jones. (Arecaceae). (not vouchered).

El Questro Gorge, El Questro Wilderness Park, WA (16.02135°S, 128.02356°E; WGS84), 14 July 2009, M.F. Braby & L.J. Aitchison. Several larvae were collected from within their shelters on *Livistona nasmophila* growing in riparian monsoon forest and reared to adult in captivity.

Penteost River, 4 km NW of El Questro Wilderness Park, WA (15.97504°S, 127.95461°E; WGS84), 2 April 2010, M.F. Braby & L.J. Aitchison. One final instar larva was recorded within its shelter on *L. nasmophila* growing in riparian woodland.

Livistona victoriae Rodd. (Arecaceae). (not vouchered).

Echidna Chasm, Purnululu National Park, WA (17.32272°S, 128.41183°E; WGS84), 2 July 2009, M.F. Braby & L.J. Aitchison. One empty egg shell, two larvae and numerous empty shelters were recorded on *Livistona victoriae* growing in depauperate monsoon forest along a gorge.

Mini Palm Gorge, Purnululu National Park, WA (17.33083°S, 128.40916°E; WGS84), 2 July 2009, M.F. Braby & L.J. Aitchison. Two early instar larvae and one empty pupal shell were collected from within their shelters on *L. victoriae* growing in mixed monsoon forest-riparian woodland; one larva was reared to adult in captivity.

PAPILIONIDAE

Graphium eurypylus nyctimus (Waterhouse & Lyell, 1914). Pale Triangle.

**Polyalthia longifolia* (Sonn.) Thwaites. (Annonaceae). (not vouchered).

Casuarina, Darwin, NT (12.366°S, 130.867°E; AGD66), 29 September 2010, M.F. Braby. Four larvae comprising one early instar and three late instars were recorded on new leaf growth of young ornamental trees of *Polyalthia longifolia*, which grew adjacent to Casuarina Shopping Centre. The site was revisited on 3 October 2010 and a further three mid-instar larvae were collected and reared to adult in captivity.

PIERIDAE

Enrema hecabe (Linnaeus, 1758). Large Grass-Yellow.

**Senna alata* (L.) Roxb. (Fabaceae). (not vouchered).

Dhamiyaka outstation, 17.5 km SSE of Gapuwiyak, Gove Peninsula, NT (12.65666°S, 135.85833°E; WGS84), 16 June 2006, M.F. Braby & I. Morris. A female was observed ovipositing on a shrub (< 1 m high) of *Senna alata* growing near the edge of monsoon vine-forest; eggs were laid singly on the upper side of the leaves.

**Senna obtusifolia* (L.) H.S. Irwin & Barneby. (Fabaceae). (voucher M.F. Braby 35, DNA).

Berrimah (CSIRO complex), Darwin, NT (12.41333°S, 130.92194°E; WGS84), 2 April 2008, M.F. Braby. Two females were observed at 1215 hr ovipositing on a low shrub of *Senna obtusifolia*, which grew in degraded savannah woodland; several eggs and larvae were also recorded on the foliage of *S. obtusifolia*.

Elodina padusa (Hewitson, 1853). Narrow-winged Pearl-white.

Capparis lasiantha R.Br. ex DC. (Capparaceae). (voucher M.F. Braby 79, DNA).

12 km S of Dunmarra, NT (16.78726°S, 133.43216°E; WGS84), 4 August 2010, M.F. Braby. One egg was collected from the underside of a mature leaf of a large scrambling vine of *Capparis lasiantha*, which grew into the canopy of mixed lanecwood-vine-thicket; adults were also present in the habitat, but were not as numerous as during a previous visit on 16 October 2005. *Elodina walkeri*, the other species

of *Elodina* that occurs in the NT, was not recorded at this site on either occasions, and its geographic range may not extend this far south in the Top End.

Appias paulina ega (Boisduval, 1836). Yellow Albatross.

Capparis sepiaria L. (Capparaceae). (voucher M.F. Braby 15, DNA).

Black Point, Cobourg Peninsula, NT (11.15515°S, 132.14391°E; WGS84), 3 February 2007, M.F. Braby. A female was observed ovipositing on *Capparis sepiaria* growing in coastal monsoon vine-thicket; several eggs were laid singly on new shoots.

Cepora perimale (Donovan, 1805). Caper Gull.

Capparis umbonata Lindl. (Capparaceae). (vouchers M.F. Braby 4, 64, DNA).

Education campground, Litchfield National Park, NT (13.11361°S, 130.79805°E; WGS84), 17 April 2006, M.F. Braby & L.J. Aitchison. A female was observed ovipositing on *Capparis umbonata* growing in savannah woodland on a gentle rocky slope; five mid-instar larvae were also recorded on the larval food plant.

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 20 December 2009, M.F. Braby. Four late instar larvae were recorded feeding on an almost leafless, spiny shrub of *C. umbonata*, which grew on sandy-loam at the base of an escarpment. The larvae were feeding together with those of *Belenois java* (see below). The site was revisited on 24 January 2010 and one final instar larva was recorded on *C. umbonata*.

Delias argenthona fragalactea (Butler, 1869). Scarlett Jezebel.

Dendrophthoe odontocalyx (F. Muell. ex Benth.) Tiegh. (Loranthaceae). (voucher M.F. Braby 29, DNA).

Gururumu outstation, Gove Peninsula, NT (12.59302°S, 136.23194°E; WGS84), 21 June 2007, M.F. Braby. One remnant pupal exuvia was found attached to a leaf of *Dendrophthoe odontocalyx*, a mistletoe parasitising the host tree *Grevillea pteridifolia*, growing in savannah woodland; several cast larval skins and larval damage to leaves were also evident. No other mistletoe species grew on the host tree or on adjacent eucalypt trees. A cohort of *Birhana cleis* was also present on the same mistletoe clump (see above).

NYMPHALIDAE

Dauans petilia (Stoll, 1790). Lesser Wanderer.

Cynanchum pedunculatum R.Br. (Apocynaceae). (voucher M.F. Braby 84, DNA).

Nanguluwur Art site, Nourlangie Rock, Kakadu National Park, NT (12.84262°S, 132.81895°E; WGS84), 13 November 2010, M.F. Braby & J. Westaway. A female was observed at 1008 hr for several minutes searching and inspecting a vine of *Cynanchum pedunculatum*, which grew

amongst footslope sandstone boulders; a single egg was eventually laid on the underside of a leaf of the food plant.

***Euploea sylvester pelor* Doubleday, 1847. Two-brand Crow.**

Parsonia alboflavescens (Dennst.) Mabb. (Apocynaceae). (not vouchered).

Rocky Bay, 5 km SSE of Yirrkala, Gove Peninsula, NT (12.29583°S, 136.90305°E; WGS84), 3 July 2006, M.F. Braby. A female was observed at 1215 hr depositing a single egg on a vine of *Parsonia alboflavescens* growing in mixed tall paperbark swampland with rainforest elements in the understorey; the larva was reared to mid-instar.

***Euploea coriua* (W.S. Macleay, 1826). Common Crow.**

Marsdenia geminata (R.Br.) P.I.Forst. (Apocynaceae). (voucher M.F. Braby 1, DNA).

5.5 km NE of Adelaide River, NT (13.21222°S, 131.14750°E; AGD66), 4 June 2006, M.F. Braby & V. Kessner. A female was observed depositing a single egg on a vine of *Marsdenia geminata* growing in regenerating riparian forest along the bank of the Adelaide River.

Parsonia alboflavescens (Dennst.) Mabb. (Apocynaceae). (not vouchered).

Rocky Bay, 5 km SSE of Yirrkala, Gove Peninsula, NT (12.29583°S, 136.90305°E; WGS84), 30 August 2007, M.F. Braby, P. Wise & B. Marika. Five eggs and two early instar larvae were collected from *Parsonia alboflavescens* growing in mixed tall paperbark swampland with rainforest elements in the understorey; the early stages were reared to the pupal or adult stage in captivity.

***Melauitis leda bankia* (Fabricius, 1775). Evening Brown.**

**Cynodon radiatus* Roth ex Roem. & Schult. (Poaceae). (voucher M.F. Braby 49, DNA).

Nathan River Ranger Station, Limmen National Park, NT (15.57681°S, 135.42783°E; WGS84), 12 May 2009, M.F. Braby & N. Collier. Numerous larvae and several pupae were recorded on *Cynodon radiatus*, as well as on *Imperata cylindrica* (Poaceae) (see below), growing along the bank of a river; one pupa was reared to adult in captivity.

Ischaemum australe R.Br. (Poaceae). (not vouchered).

Buffalo Creek, Leanyer swamp, NT (12.35353°S, 130.90407°E; WGS84), 6 February 2010, M.F. Braby. Five mid-instar larvae were recorded feeding on *Ischaemum australe* growing in paperbark swampland adjacent to mangroves; the larvae were clustered into two groups on the underside of blades of *I. australe*.

***Hypocysta adiaute autirius* Butler, 1868. Orange Ringlet.**

**Sporobolus* sp. (Poaceae). (voucher M.F. Braby 9, DNA).

Berrimah (CSIRO complex), Darwin, NT (12.41333°S, 130.92194°E; WGS84), 23 February 2006, M.F. Braby. A female was observed at 1240 hr depositing a single egg on

the underside of a blade of an undetermined introduced species of grass growing in savannah woodland; one late instar larva was also noted at rest on the same blade of *Sporobolus* sp., which showed signs of recent larval damage.

Chloris sp. (Poaceae). (not vouchered).

Lee Point, Casuarina Coastal Reserve, NT (12.33166°S, 130.89444°E; WGS84), 11 March 2006, M.F. Braby. A female was observed during the early afternoon depositing a single egg on the underside of a blade of *Chloris* sp. growing along the edge of coastal semi-deciduous monsoon vine-thicket.

Arundinella nepalensis Trin. (Poaceae). (voucher M.F. Braby 61, DNA).

King Edward River, WA (14.88834°S, 126.20372°E; WGS84), 11 July 2009, M.F. Braby & L.J. Aitchison. A female was observed at 1315 hr depositing a single egg on *Arundinella nepalensis* growing along the bank of a river in riparian paperbark woodland; the egg was laid on new fresh growth at the base of a large tussock of this grass.

Ischaemum australe R.Br. (Poaceae). (voucher M.F. Braby 60, DNA).

El Questro Gorge, El Questro Wilderness Park, WA (16.02135°S, 128.02356°E; WGS84), 14 July 2009, M.F. Braby & L.J. Aitchison. One late instar larva was recorded feeding on a blade of *Ischaemum australe* growing in a dry seasonal gully.

LYCAENIDAE

***Hypochrysops apelles* (Fabricius, 1775). Copper Jewel.**

Ceriops australis (C.T.White) Ballment, T.J.Sm. & J.A.Stoddart. (Rhizophoraceae). (voucher M.F. Braby 65, DNA).

Buffalo Creek, Leanyer swamp, NT (12.35353°S, 130.90407°E; WGS84), 27 April 2008, M.F. Braby. Four larvae were collected from foliage of *Ceriops australis* growing in mangroves some distance from the landward edge and reared to adult in captivity; larvae were attended by black ants, *Crematogaster* sp. (species group C).

***Hypochrysops ignita erythriua* (Waterhouse & Lyell, 1909). Fiery Jewel.**

Gardenia megasperma F.Muell. (Rubiaceae). (not vouchered).

Litchfield National Park, NT (13.12555°S, 130.80305°E; WGS84), 15 April 2006, M.F. Braby & L.J. Aitchison. Two larvae were collected feeding on large, broad leaves of shrubs of *Gardenia megasperma* growing on a rocky sandstone plateau; the larvae were attended by numerous coconut ants, *Papyrius* sp. (*nitidus* species group), and were reared to adult in captivity.

***Arhopala eupolis asopus* Waterhouse & Lyell, 1914. Purple Oak-blue.**

Corymbia bella K.D.Hill & L.A.S.Johnson. (Myrtaceae). (voucher M.F. Braby 46, DNA).

Gunlom, Kakadu National Park, NT (13.43555°S, 132.41565°E; WGS84), 28 August 2008, M.F. Braby & L.J. Aitchison. Two recent empty pupal exuviae and one parasitised pupa were recorded within curled leaves of a sapling (approx. 1.5 m high) of *Corymbia bella* growing in open flood plain of South Alligator River; a pair of freshly emerged adults was also observed at 1700 hr mating on the same plant; nests of the attendant green-tree ant, *Oecophylla smaragdina*, were present. Adults of *Arhopala micale* were not detected on *C. bella*, or elsewhere at the site.

Terminalia ferdinandiana Excell. (Combretaceae). (not vouchered).

Nanguluwur Art site, Nourlangie Rock, Kakadu National Park, NT (12.84262°S, 132.81895°E; WGS84), 7 December 2009, M.F. Braby & J.J. Armstrong. Several larvae were recorded on a shrub (1.5 m high) of *Terminalia ferdinandiana* growing in savannah woodland; larvae were attended by green-tree ants, *Oecophylla smaragdina*, and were noticed to have caused considerable damage to the foliage; adults alighted frequently on the foliage of *T. ferdinandiana*.

***Arhopala micale* Blanchard, [1848]. Shining Oak-blue.**

Brachychiton diversifolius R.Br. (Malvaceae). (not vouchered).

Berrimah (CSIRO complex), Darwin, NT (12.41333°S, 130.92194°E; WGS84), 10 January 2007, M.F. Braby. Three eggs were collected from mature leaves of *Brachychiton diversifolius* growing in savannah woodland; one egg hatched and was reared to final instar on new fresh foliage of *B. diversifolius*.

Sterculia quadrifida R.Br. (Malvaceae). (voucher M.F. Braby 90, DNA).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 18 December 2010, M.F. Braby & J. Westaway. Five late instar larvae were recorded feeding on soft new leaf growth of medium sized trees of *Sterculia quadrifida*, which grew in monsoon vine-thicket on a low lateritic cliff above the beach; larvae were attended by *Oecophylla smaragdina* ants. The site was revisited on 20 December 2010 and four additional larvae, one pupa and a freshly emerged adult were recorded on *S. quadrifida*; the pupa was located inside a silken shelter comprising a rolled mature leaf and attended by numerous ants.

***Ogyris amaryllis meridionalis* (Bethune-Baker, 1905). Satin Azure.**

Diplatia grandibractea (F.Muell. & Tate) Tiegh. (Loranthaceae). (voucher M.F. Braby 78, DNA).

Near Lake Mary Ann, 5 km NNW of Tennent Creek, NT (19.60678°S, 134.20479°E; WGS84), 18 August 2010, M.F. Braby. Numerous eggs were recorded on haustoria of a mistletoe *Diplatia grandibractea* parasitising smooth white barked eucalypts growing in woodland with a ground layer of *Triodia* sp.; fresh larval feeding scars were also evident on the foliage and bracts of the mistletoe.

***Hypolycaena phorbas phorbas* (Fabricius, 1793). Black-spotted Flash.**

Decaisnina signata (F.Muell. ex Benth.) Tiegh. (Loranthaceae). (not vouchered).

Black Point, Cobourg Peninsula, NT (11.15515°S, 132.14391°E; WGS84), 23 April 2008, M.F. Braby & K. Nishida. One final instar larva was recorded feeding on foliage of the mistletoe *Decaisnina signata* parasitising a host tree *Alstonia actinophylla* (A.Cunn.) K.Schum. (Apocynaceae) growing in degraded monsoon vine-thicket; the larva was attended by three green-tree ants, *Oecophylla smaragdina*; one pupal exuvia was also collected from within a curled leaf shelter on the mistletoe.

***Anthene lycanoides godeffroyi* (Semper, [1879]). Pale Ciliate-blue.**

Barringtonia acutangula (L.) Gaertn. (Lecythidaceae). (not vouchered).

Ooloo Crossing, Daly River, NT (14.06946°S, 131.25052°E; WGS84), 12 April 2009, M.F. Braby & L.J. Aitchison. Several females were observed at 1415–1430 hr ovipositing on flower buds of *Barringtonia acutangula* growing in riparian monsoon forest on a steep sandy bank; one final instar larva was also collected feeding on soft new leaves of *B. acutangula* and reared to adult in captivity; the pupal duration was six days.

***Caudalides margarita gilberti* Waterhouse, 1903. Trident Pencil-blue.**

Decaisnina triflora (Span.) Tiegh. (Loranthaceae). (voucher M.F. Braby 12, DNA).

Nawurlandja (Little Nourlangie Rock), Kakadu National Park, NT (12.85701°S, 132.79053°E; WGS84), 19 April 2008, M.F. Braby & K. Nishida. Two hatched eggs were recorded on new leaves of *Decaisnina triflora*; feeding damage from first instar larvae was also evident, but no larvae were detected.

***Caudalides geminus* E.D. Edwards & Kerr, 1978. Twin Dusky-blue.**

Cassytha filiformis L. (Lauraceae). (vouchers M.F. Braby 27, 082, DNA).

Ovipositing females, eggs and larvae were frequently recorded (and subsequently reared to adult in captivity) on *Cassytha filiformis* growing in heathland or woodland on sandstone from many locations in western Arnhem Land, including Gubara Track, Nourlangie Rock and Gunlom of Kakadu National Park, and Katherine Gorge of Nitmiluk National Park, NT, during January, May, July, August, November and December 2007–2009.

Cassytha capillaris Meisn. (Lauraceae). (not vouchered).

Nourlangie Rock, Kakadu National Park, NT (12.85463°S, 132.81677°E; WGS84), 4 May 2008, M.F. Braby & L.J. Aitchison. Females were observed at 1410–1412 hr ovipositing on *Cassytha capillaris* parasitising *Triodia* sp. growing in heathy woodland on sandstone; eggs were laid singly on flowers or new soft tendrils; two

mid-instar larvae were also collected on *C. capillaris* and reared to adult in captivity.

***Candalides heathi heathi* (Cox, 1873). Rayed Blue**
Prostanthera striatiflora F.Muell. (Lamiaceae). (voucher M.F. Braby 8, DNA).

Larapinta Drive, approx. 95 km W of Hermannsburg, NT (23.88722°S, 131.90805°E; WGS84), 12 October 2005, M.F. Braby & L.J. Aitchison. Nine larvae of various instars were collected from *Prostanthera striatiflora* and reared to adult in captivity; eggs were also recorded singly on leaves, flowers and developing fruits; the pupal duration varied from six months to three years.

***Nesolycaena urnuelia* (Tindale, 1922). Spotted Opal.**
Boronia laxa Duretto. (Rutaceae). (vouchers M.F. Braby 25, 026, DNA).

Nourlangie Rock, Kakadu National Park, NT (12.85930°S, 132.81754°E; WGS84), 27 January 2007, M.F. Braby & L.J. Aitchison. A female was observed at 1140 hr ovipositing on a herb of *Boronia laxa*, which grew in heathy woodland on sandstone; eggs were laid singly on the underside of broad new leaves of separate plants; a second female was observed at 1315 hr depositing a single egg on the underside of a leaf of *B. laxa*. The site was revisited on 4 May 2008 and a female was observed at 1350 hr ovipositing on petals of *B. laxa*.

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 31 January 2009, M.F. Braby & L.J. Aitchison. A female was observed at 1330 hr depositing a single egg on a flower bud of *B. laxa*; numerous eggs were also recorded on the underside of leaves and one mid-instar larva was noted feeding on the foliage of *B. laxa*. The site was revisited on 24 January 2010 and one pupal exuvia was recorded on the underside of a leaf of *B. laxa*.

***Prosotas dubiosa dubiosa* (Semper, [1879]). Purple Line-blue.**

Millettia pinnata (L.) Panigrahi. (Fabaceae). (not vouchered).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 15 September 2009, M.F. Braby. A female was observed ovipositing on flower buds of a small tree (approx. 5 m high) of *Millettia pinnata*, which grew in coastal parkland; numerous freshly emerged females were also observed settled on *M. pinnata*.

***Catopyrops florinda estrella* (Waterhouse & Lyell, 1914). Speckled Line-blue.**

Mallotus nesophilus Muell.Arg. (Euphorbiaceae). (voucher M.F. Braby 22, DNA).

East Point, Darwin, NT (12.41140°S, 130.82500°E; WGS84), 30 September 2006, M.F. Braby. Females were observed ovipositing on fresh leaves of *Mallotus nesophilus* growing along the edge of coastal semi-deciduous monsoon vine-thicket; additional eggs and early instar larvae were also recorded on the underside of leaves of *M. nesophilus*.

The site was revisited on 8 October 2006 and an egg and first instar larva were collected from *M. nesophilus* and reared to adult in captivity.

***Dodonaea hispidula* Endl. (Sapindaceae).** (vouchers M.F. Braby 37, 054, DNA).

Mt Cahill, Kakadu National Park, NT (12.86488°S, 132.70468°E; WGS84), 3 May 2008, M.F. Braby & L.J. Aitchison. Numerous eggs were recorded on the underside of leaves of *Dodonaea hispidula* growing in eucalypt woodland with a heath understorey on a rocky quartzite-sandstone slope; a female was also observed displaying oviposition behaviour (i.e. trailing and probing her abdomen on *M. nesophilus*), but she did not lay any eggs.

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 14 March 2009, M.F. Braby. Three larvae were collected from the underside of leaves of *D. hispidula* growing in low woodland at the summit of a rocky hill; the larvae were subsequently reared to adult in captivity. The site was revisited on 17 April 2010 and a female was observed at 1125 hr depositing a single egg on the underside of a new leaf of *D. hispidula*; one mid-instar larva was also recorded on the underside of a leaf of *D. hispidula*.

Amalia Gorge, El Questro Wilderness Park, WA (15.98124°S, 128.03708°E; WGS84), 2 April 2010, M.F. Braby & L.J. Aitchison. Empty egg shells and one late instar larva were recorded on foliage of *D. hispidula* growing near the entrance of the sandstone gorge.

***Thecliuesthes sulphitius* (Miskin, 1890). Sapphire Blue.**

Tecticornia halocnemoides (Nees) K.A. Sheph. & Paul G. Wilson. (Amaranthaceae). (voucher M.F. Braby 2, DNA).

12.5 km SW of Palmerston, NT (12.56246°S, 130.90619°E; WGS84), 25 April 2007, M.F. Braby. Several egg shells and larval feeding damage were recorded on *Tecticornia halocnemoides* growing in saltmarsh. The site was revisited on 10 June 2006 and a female was observed at 1325 hr depositing a single egg on *T. halocnemoides*; several additional eggs were also recorded on *T. halocnemoides*.

***Thecliuesthes miskini miskini* (T.P. Lucas, 1889). Wattle Blue.**

Acacia difficilis Maiden. (Fabaceae). (voucher M.F. Braby 5, DNA).

Litchfield National Park, NT (13.12555°S, 130.80305°E; WGS84), 15 April 2006, M.F. Braby & L.J. Aitchison. Six prepupae and pupae were collected from foliage of *Acacia difficilis* growing on a rocky sandstone plateau; the early stages were attended by meat ants, *Iridomyrmex reburnns*, and were subsequently reared to adult in captivity.

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 24 January 2010, M.F. Braby & L.J. Aitchison. All early stages were recorded in abundance on *A. difficilis* growing in a sandstone gully; larvae and pupae were attended by small brown ants, *Iridomyrmex pallidus*.

Acacia platycarpa F. Muell. (Fabaceae). (not vouchered).

Gurrandalng, Keep River National Park, NT (15.87478°S, 129.05144°E; WGS84), 2 February 2008, M.F. Braby & V. Kessner. Numerous eggs, three larvae and one pupa were recorded on several shrubs of *Acacia platycarpa*; larvae were attended by swarms of meat ants, *Iridomyrmex* sp.

Corymbia bella K.D. Hill & L.A.S. Johnson. (Myrtaceae). (not vouchered).

Flora River Nature Park, NT (14.75744°S, 131.59694°E; WGS84), 31 January 2008, M.F. Braby & V. Kessner. Several larvae were recorded on a sapling of *Corymbia bella* growing in open vine-thicket on limestone; larvae were attended by numerous meat ants, *Iridomyrmex* sp.

Corymbia ferruginea (Schauer) K.D. Hill & L.A.S. Johnson. (Myrtaceae). (not vouchered).

Cabbage Gum, Charles Darwin University, Katherine, NT (14.39932°S, 132.14186°E; WGS84), 25 January 2009, M.F. Braby & V. Kessner. All stages were recorded on a sapling (approx. 1 m high) of *Corymbia ferruginea* growing in monsoon vine-thicket on limestone karst; larvae were attended by numerous sugar ants, *Camponotus crozieri*, at night as well as during daytime.

Santalum lanceolatum R.Br. (Santalaceae). (voucher M.F. Braby 36, DNA).

Jasper Gorge, approx. 58 km SW of Victoria River Roadhouse, NT (16.03119°S, 130.80275°E; WGS84), 21 March 2008, M.F. Braby & V. Kessner. A female was observed at 1450 hr ovipositing on a tall shrub (approx. 3 m high) of *Santalum lanceolatum*, which grew in woodland along a dry rocky sandstone seasonal gully; numerous eggs were also present on new leaf growth; one pupa was found at the base of the stem where it was well protected beneath debris; a pupal exuvia was also recorded on the upperside of a leaf of *S. lanceolatum*.

Jauides phaseli (Mathew, 1889). Purple Cerulean.

Sesbania simpliciuscula F. Muell. ex Benth. (Fabaceae). (voucher M.F. Braby 44, DNA).

Escarpment Walk, Gregory (Jutpurra) National Park, NT (15.61325°S, 131.11597°E; WGS84), 16 March 2008, M.F. Braby & V. Kessner. Females were observed ovipositing on *Sesbania simpliciuscula* growing in savannah woodland at the base of an escarpment; numerous eggs were also recorded on flower buds of *S. simpliciuscula*.

Catochryps panormus platissa (Herrich-Schäffer, 1869). Pale Pea-blue.

Sesbania simpliciuscula F. Muell. ex Benth. (Fabaceae). (voucher M.F. Braby 45, DNA).

Duncan Road, Hicks Creek crossing, NT (16.19774°S, 129.05383°E; WGS84), 19 March 2008, M.F. Braby & V. Kessner. A female was observed ovipositing on *Sesbania simpliciuscula*, which grew in abundance along a roadside.

Duncan Road, Rosewood Station, NT (16.46031°S, 129.03348°E; WGS84), 19 March 2008, M.F. Braby & V. Kessner. Several females were observed ovipositing on *S. simpliciuscula*, which grew in abundance along a roadside.

Zizeeria karsaudra (Moore, 1865). Spotted Grass-blue.

Tribulopsis bicolor F. Muell. (Zygophyllaceae). (voucher M.F. Braby 75, DNA).

Intersection of Buchanan Hwy and Victoria Hwy, 20 km SE of Timber Creek, NT (15.74320°S, 130.64830°E; WGS84), 1 April 2010, M.F. Braby & L.J. Aitchison. Several eggs were recorded on the underside of leaves of *Tribulopsis bicolor* growing in a disturbed roadside verge in savannah woodland; numerous adults were observed flying in close proximity or settling on *T. bicolor*.

Famegana alsulus alsulus (Herrich-Schäffer, 1869). Black-spotted Grass-blue.

Vigna vexillata (L.) A. Rich. (Fabaceae). (voucher M.F. Braby 6, DNA).

Magnetic Termite Mounds, Litchfield National Park, NT (13.10500°S, 130.84250°E; WGS84), 15 March 2006, M.F. Braby & D.A. Young. A female was observed during mid-afternoon ovipositing on a twining creeper of *Vigna vexillata*, which grew in savannah woodland; numerous additional eggs were also present on tendrils of *V. vexillata*.

NOCTUIDAE: AGARISTINAE

Agarista agricola biformis Butler, 1884 (Fig. 1). Painted Day-moth.

Leea rubra Blume ex Spreng. (Vitaceae). (voucher M.F. Braby 83, DNA).

Mt Bundy, Mary River National Park, NT (12.85990°S, 131.60281°E; WGS84), 30 October 2010, M.F. Braby. A female was observed at 1415 hr ovipositing on *Leea rubra* growing along the edge or ecotone of deciduous monsoon vine-thicket during overcast conditions with light rain; a second female was subsequently observed at 1600 hr actively searching *L. rubra* on which to lay eggs during bright sunny conditions; eggs were bright green and laid on stems and dry leaf bracts, and hatched five days later; four early instar larvae were also collected from the foliage of three separate shrubs and reared to adult in captivity on *L. rubra*, as well as on *L. indica* (Burm.f.) Merr. The site was revisited on 14 November 2010 and a further four early instar larvae were collected from *L. rubra* growing in the ecotone or in savannah woodland adjacent to deciduous monsoon vine-thicket; one larva was reared to adult in captivity.

Comocrus behri (Angas, 1847) (Fig. 2). Mistletoe Day-moth.

Amyema maidenii (Blakely) Barlow. (Loranthaceae). (not vouchered).

Alice Springs Desert Park, Alice Springs, NT (23.700°S, 133.833°E; WGS84), 13 February 2010, M.F. Braby & L.J. Aitchison. Three larvae were collected from clumps of the mistletoe *Amyema maidenii* that were parasitising *Acacia aneura* and reared to adult in captivity; a final instar larva was also collected crawling rapidly along the ground

beneath the mulga host tree in search of a pupation site. Several adults were present at the breeding site.

Anyema sauginea (F.Muell.) Danser. (Loranthaceae). (not vouchered).

Limbunya Station, Victoria River District, NT (17.52339°S, 130.05701°E; WGS84), 25 July 2010, M.F. Braby. A cohort of nine late instar larvae was recorded feeding openly, but not gregariously, on a single clump of the mistletoe *Anyema sauginea* that was parasitising the host tree *Corymbia* sp. growing in eucalypt open woodland with a ground layer of *Triodia* sp. on red sandy soil; six larvae were collected, two of which were reared to adult in captivity.

Cruria tropica (T.P. Lucas, 1891) (Fig. 3)

Typhonium flagelliforme (Lodd.) Blume. (Araceae). (voucher M.F. Braby 40, DNA).

Howard Springs Nature Reserve, NT (12.45240°S, 131.05347°E; WGS84), 16 and 24 February 2008, 8 and 24 March 2008, M.F. Braby. Several females were observed during mid-afternoon (1430–1530 hr) during the wet season ovipositing on *Typhonium flagelliforme*, a seasonal geophytic herb, which grew in paperbark-pandanus swamp adjacent to wet evergreen monsoon vine-forest; eggs were laid singly on the underside of leaves; numerous larvae were also collected from *T. flagelliforme* and reared to adult in captivity.

Idalina aethrias (Turner, 1908). No common name. (Fig. 4)

Hibbertia cistifolia R.Br. ex DC. (Dilleniaceae). (voucher M.F. Braby 23, DNA).

Caiman Creek, Cobourg Peninsula, NT (11.22504°S, 132.20236°E; WGS84), 22 February 2007, M.F. Braby & D.A. Lane. One late instar larva was recorded on the foliage of *Hibbertia cistifolia* growing in savannah woodland.

Hibbertia brevipedunculata Toelken. (Dilleniaceae). (voucher M.F. Braby 21, DNA).

3 km N of Berry Springs, NT (12.67554°S, 131.00994°E; WGS84), 14 January 2007, M.F. Braby. Two females were observed at 1440 hr and 1535 hr ovipositing on the foliage of *Hibbertia brevipedunculata* or on nearby objects (i.e. ground, leaves of other plants) in savannah woodland. The site was revisited on 2 November 2008 and 11 larvae in various instars were recorded on the larval food plant, several of which were reared to adult in captivity. This food plant was only recently described, and is listed as *Hibbertia* sp. Mt Finnis in Kerrigan & Albrecht (2007) and was vouchered in DNA under that name.

Idalina leonora (Doubleday, 1846). No common name. (Fig. 5)

Hibbertia brownii Benth. (Dilleniaceae). (voucher M.F. Braby 24, DNA).

Caiman Creek, Cobourg Peninsula, NT (11.22364°S, 132.21402°E; WGS84), 21 February 2007, M.F. Braby & D.A. Lane. Females were observed at 1520 hr and 1745

hr ovipositing on *Hibbertia brownii* growing in savannah woodland; eggs were laid singly on flower buds or dead twigs; one mid-instar larva was collected from the underside of a leaf and reared to the pupal stage. The site was revisited on 15 March 2007 and females were observed at 1543 hr, 1550 hr and 1655 hr ovipositing on *H. brownii*; empty egg shells were also located on *H. brownii*; all eggs were laid singly, mostly on flower buds or sometimes on leaf bracts of developing flower spikelets and on new leaf shoots at the apex of a branch of *H. brownii*.

Hibbertia candidans Benth. (Dilleniaceae). (voucher M.F. Braby 67, DNA).

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 20 December 2009, M.F. Braby. Two larvae were collected from *Hibbertia candidans* growing in sandy-loam at the base of an escarpment; one larva was reared to adult in captivity.

0.4 km NE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84535°S, 132.82072°E; WGS84), 24 January 2010, M.F. Braby & L.J. Aitchison. Two early instar larvae and one late instar larvae were collected from separate shrubs of *H. candidans* growing in open woodland on a sandstone plateau; one larva was reared to adult in captivity.

0.6 km W of Gubara Track, Nourlangie Rock, Kakadu National Park, NT (12.83721°S, 132.84970°E; WGS84), 27 November 2010, M.F. Braby. One final instar larva was collected from *H. candidans* and reared to adult in captivity.

Periopta ardescens (Butler, 1884). No common name. (Fig. 6)

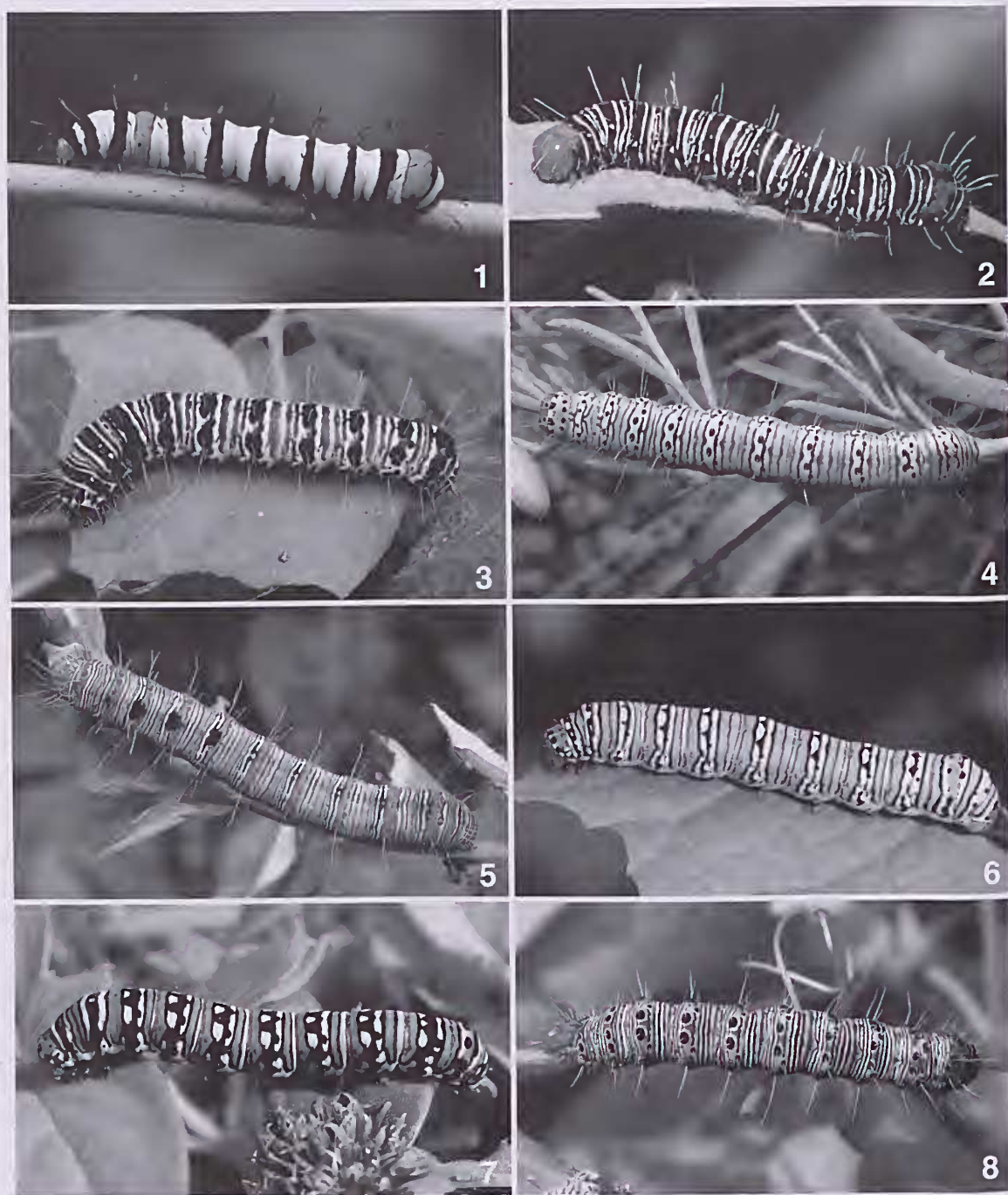
Ampelocissus frutescens Jackes. (Vitaceae). (vouchers M.F. Braby 57, 058, DNA).

Bullita Rd, 11 km SSE of Timber Creek, NT (15.75712°S, 130.51135°E; WGS84), 10 December 2008, M.F. Braby & V. Kessner. Numerous larvae were recorded feeding on new regenerating leaves of *Ampelocissus frutescens* growing in savannah woodland; several larvae were reared to adult in captivity; most larvae developed directly and emerged a few weeks later, but others emerged one or two years later. The larvae occurred together with those of *Radiocera vagata* (see below).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 12 December 2008, M.F. Braby. One late instar larva was collected from *A. frutescens* growing in woodland at the base of a hill and reared to adult in captivity.

Ampelocissus acetosa (F.Muell.) Planch. (Vitaceae). (not vouchered).

Buffalo Creek, Lee Point, NT (12.33639°S, 130.90389°E; WGS84), 28 November 2009, M.F. Braby. Seven larvae in various instars were collected from *Ampelocissus acetosa* growing in savannah woodland regenerating after dry season burns and pre-monsoon storms; a few larvae were reared to adult in captivity. The larvae occurred together with those of *Radiocera vagata* (see below).



Figs 1–8. Larvae of Noctuidae: Agaristinae from the Northern Territory discussed in this paper; 1, *Agarista agricola* on *Leea rubra*, Mt Bundy, Mary River National Park; 2, *Comocrus behri* on *Anyema sanguinea*, Limbunya Station, Victoria River District; 3, *Cruria tropica* on *Typhonium flagelliforme*, Howard Springs Nature Reserve; 4, *Idalina aethrias* on *Hibbertia brevipedunculata*, Berry Springs; 5, *Idalina leonora* on *Hibbertia brownii*, Caiman Creek, Cobourg Peninsula; 6, *Periopta ardescens* on *Ampelocissus acetosa*, Buffalo Creek, Lee Point; 7, *Periopta diversa* on *Spermococe phalloides*, Leanyer, Darwin; 8, *Radinocera vagata* on *Ampelocissus acetosa*, Buffalo Creek, Lee Point. Photos by M.F. Braby.

Nanguluwur Art site, Kakadu National Park, NT (12.84262°S, 132.81895°E; WGS84), 7 and 19 December 2009, M.F. Braby & J.J. Armstrong. Females were observed at 1730 hr and 1845–1850 hr (just before sunset) ovipositing on *A. acetosa* growing in woodland near the base of an escarpment; numerous larvae in various instars were also recorded on *A. acetosa*.

Periopta diversa (Walker, [1865]). No common name. (Fig. 7)

Spermococe phalloides Harwood. (Rubiaceae). (not vouchered).

Leanyer Recreation Park, Darwin, NT (12.39055°S, 130.91167°E; WGS84), 21 December 2005, 5, 20 and 21 January 2006, M.F. Braby. Numerous larvae were recorded on *Spermococe phalloides* growing in disturbed grassland, several of which were reared to adult in captivity.

Oldenlandia sp. (Rubiaceae). (vouchers M.F. Braby 10, 11, DNA).

Leanyer Recreation Park, Darwin, NT (12.39055°S, 130.91167°E; WGS84), 4, 20 and 21 January 2006, M.F. Braby. Numerous females were observed at 1710–1855 hr (within a few hours of dusk) ovipositing on *Oldenlandia* sp., as well as on other small herbs, including grass blades, growing in disturbed grassland; eggs were laid singly; several larvae were also collected from *Oldenlandia* sp. and reared to adult in captivity.

Holmes Jungle National Park, NT (12.400°S, 130.916°E; AGD66), 6 February 2010, M.F. Braby. Several females were observed at 1720–1740 hr ovipositing on *Oldenlandia* sp. growing in a disturbed area along a track; eggs were laid singly and directly onto leaves of *Oldenlandia* sp.; two larvae were also recorded on *Oldenlandia* sp.

Radinocera vagata (Walker, 1865). No common name. (Fig. 8)

Ampelocissus acetosa (F.Muell.) Planch. (Vitaceae). (voucher M.F. Braby 17, DNA).

Caiman Creek, Cobourg Peninsula, NT (11.22504°S, 132.20236°E; WGS84), 7 and 22 February 2007, M.F. Braby & V. Kessner. Three larvae were collected from vines of *Ampelocissus acetosa* growing in savannah woodland; two larvae were reared to adult in captivity.

Lee Point, Casuarina Coastal Reserve, NT (12.33166°S, 130.89444°E; WGS84), 16 February 2008, M.F. Braby. Two late instar larvae were recorded on a vine of *A. acetosa* growing around *Corymbia bella* in parkland adjacent to coastal semi-deciduous monsoon vine-thicket.

Buffalo Creek, Lee Point, NT (12.33639°S, 130.90389°E; WGS84), 28 November 2009, M.F. Braby. Ten larvae in various instars were collected from *A. acetosa* growing in savannah woodland that was regenerating after a dry season burn and pre-monsoon storms; all larvae were feeding singly, with a maximum of two per vine; several larvae were reared to adult in captivity. The early stages occurred together with those of *Periopta ardescens* (see above).

Ampelocissus frutescens Jackes. (Vitaceae). (voucher M.F. Braby 58, DNA).

Bullita Rd, 11 km SSE of Timber Creek, NT (15.75712°S, 130.51135°E; WGS84), 10 December 2008, M.F. Braby & V. Kessner. Six larvae were collected feeding openly on *Ampelocissus frutescens* growing in savannah woodland; most larvae were on separate plants and several were reared to adult in captivity. The larvae occurred together with those of *Periopta ardescens* (see above).

9 km SE of Timber Creek, NT (15.57325°S, 130.51804°E; WGS84), 10 December 2008, M.F. Braby & V. Kessner. Several larvae were recorded on *A. frutescens* growing in savannah woodland.

Cayratia maritima Jaekes. (Vitaceae). (voucher M.F. Braby 14, DNA).

2 km ENE of Black Point, Cobourg Peninsula, NT (11.15015°S, 132.16125°E; WGS84), 13 March 2007, M.F. Braby. One late instar larva was collected from *Cayratia maritima* growing in paperbark woodland adjacent to a swamp and reared to adult in captivity; the pupal duration was approx. seven months.

Buffalo Creek, Lee Point, NT (12.34497°S, 130.90578°E; WGS84), 8 March 2008, M.F. Braby. Two late instar larvae were recorded on a vine of *C. maritima*, which grew around the trunk of a dead *Acacia* sp. along the edge of a paperbark swamp. The site was revisited on 7 November 2010 and two early instar larvae were collected from new leaf growth of *C. maritima* growing on the trunk of a *Melaleuca* sp. tree and reared to adult in captivity.

Cayratia trifolia (L.) Domin. (Vitaceae). (voucher M.F. Braby 89, DNA).

Mt Bundy, Mary River National Park, NT (12.85990°S, 131.60281°E; WGS84), 30 October 2010, M.F. Braby. Four early instar larvae were collected from new growth of *Cayratia trifolia* growing on the trunk of a eucalypt in savannah woodland and reared to adult in captivity.

NEW LEPIDOPTERA LARVAL FOOD PLANT ASSOCIATIONS FOR THE NORTHERN TERRITORY AND/OR NORTHERN WESTERN AUSTRALIA

The following catalogue of species comprises plants that have previously been recorded as larval food plants from eastern Australia (e.g. Common 1990; Braby 2000) but, to the author's knowledge, have not been previously documented for the NT and/or the Kimberley region of western NT and north-western WA.

GEOMETRIDAE

Dysphania uuuana (Cramer, 1779). Six O'clock Moth.

Carallia brachiata (Lour.) Merr. (Rhizophoraceae). (not vouchered).

Ovipositing females and/or the early stages were frequently recorded on *Carallia brachiata* growing in riparian monsoon forest and semi-deciduous monsoon vine-thicket from many locations, including Darwin, Litchfield National Park, Beatrice Hill, Kakadu National Park and Gove Peninsula. Females were observed ovipositing during the late afternoon (1540–1745 h); eggs were laid on the underside of mature leaves and stems of *C. brachiata*; larvae fed solitarily on young soft foliage and pupated within a shelter made from two or more mature leaves of *C. brachiata*.

HESPERIIDAE

Chaetocneme denitza (Hewitson, 1867). Ornate Dusk-flat.

Planchonia careya (F.Muell.) Kunth. (Lecythidaceae). (not vouchered).

Black Point, Cobourg Peninsula, NT (11.1551°S, 132.14391°E; WGS84), 19 February 2007, M.F. Braby & D.A. Lane. One first instar larva was collected from a small regenerating sapling of *Planchonia careya* growing in disturbed savannah woodland and reared to adult by DAL.

Berrimah (CSIRO complex), Darwin, NT (12.41333°S, 130.92194°E; WGS84), 11 March 2008, M.F. Braby. A freshly emerged male and a pupal shelter were collected from a small tree of *Planchonia careya* growing in degraded savannah woodland; the adult perched upside-down on the underside of a leaf at midday.

Taractrocera sp. (*ina* Waterhouse, 1932, or *anisomorpha* Lower, 1911). Grass-dart.

Eulalia aurea (Bory) Kunth. (Poaceae). (voucher M.F. Braby 42, DNA).

Standley Chasm, West Macdonnell Ranges, NT (23.72150°S, 133.46982°E; WGS84), 4 March 2007, M.F. Braby & C.M. Palmer. Numerous larvae were recorded within their tubular shelters on *Eulalia aurea* growing in water or damp areas in riparian eucalypt open forest. Adults of both species were present in the habitat and either may have been using this native grass.

Taractrocera sp. (*ina* or *anisomorpha*). Grass-dart.

**Cenchrus ciliaris* (Kuntze) L. (Poaceae). (not vouchered).

Standley Chasm, West Macdonnell Ranges, NT (23.72150°S, 133.46982°E; WGS84), 2 March 2007, M.F. Braby & C.M. Palmer. Several eggs and larvae were recorded on *Cenchrus ciliaris* growing in riparian eucalypt open forest. Adults of both species were present in the habitat and either may have been using this invasive, introduced, perennial tussock grass.

Taractrocera sp. (*ina* or *anisomorpha*). Grass-dart.

**Paspalum conjugatum* Bergius. (Poaceae). (voucher M.F. Braby 43, DNA).

Standley Chasm, West Macdonnell Ranges, NT (23.72150°S, 133.46982°E; WGS84), 4 March 2007, M.F. Braby & C.M. Palmer. Numerous larvae were recorded

within their tubular shelters on the broad-leaved tufted perennial grass *Paspalum conjugatum*, which grew in water or damp areas in riparian eucalypt open forest. Adults of both species were present in the habitat and either may have been using this introduced grass.

Telicota colou argea (Plötz, 1883). Pale-orange Darter. *Ischaemum australe* R.Br. (Poaceae). (not vouchered).

Amalia Gorge, El Questro Wilderness Park, WA (15.98124°S, 128.03708°E; WGS84), 15 July 2009, M.F. Braby. Three females were observed during mid-afternoon ovipositing on *Ischaemum australe* growing along a creek; one larva was also collected from within its shelter on *I. australe* and reared to adult in captivity.

Cephrenes trichopepla (Lower, 1908). Yellow Palm-dart.

Livistona benthamii F.M.Bailey. (Arecaceae). (not vouchered).

Cahills Crossing, East Alligator River, Kakadu National Park, NT (12.42542°S, 132.96458°E; WGS84), 6 November 2009, M.F. Braby & L.J. Aitchison. Fourteen larvae were recorded from within their shelters on *Livistona benthamii* growing along the edge of riparian monsoon forest; several larvae were reared to adult in captivity.

PAPILIONIDAE

Graphium eurypylus nycimus (Waterhouse & Lyell, 1914). Pale Triangle.

Miliusa traceyi Jessup. (Annonaceae). (voucher M.F. Braby 85, DNA).

Mt Bundy, Mary River National Park, NT (12.85990°S, 131.60281°E; WGS84), 28 November 2010, M.F. Braby. Two females were observed at 1250 hr for several minutes ovipositing on shrubs of *Miliusa traceyi* growing along the edge of semi-deciduous monsoon vine-thicket; numerous eggs were laid on the underside of leaves, including new growth as well as older mature leaves; two early instar larvae were also noted feeding on the new soft leaves of *M. traceyi*.

Papilio aegaeus aegaeus (Donovan, 1805). Orchard Swallowtail.

**Citrus* sp. (Rutaceae). (not vouchered).

Nhulunbuy, Gove Peninsula, NT (12.17805°S, 136.78361°E; WGS84), 6 September 2007, M.F. Braby & P. Wise. Two larvae were collected on *Citrus* sp. growing in a residential garden and reared to adult in captivity; the larvae pupated on 13 September 2007 and emerged as adults 11 days later. The site was revisited on 24 June 2008 and a further three larvae were collected from *Citrus* sp. and reared to adult in captivity; the larvae pupated the following month and emerged 13 days later.

Papilio fuscus cauopus Westwood, 1842. Fuscous Swallowtail.

**Citrus* sp. (Rutaceae). (not vouchered).

Yirrkala, Gove Peninsula, NT (12.25611°S, 136.89778°E; WGS84), 26 January 2008, M.F. Braby & P. Wise. Numerous

eggs and several first instar larvae were collected from new leaf growth of *Citrus* sp. growing in an orchard adjacent to monsoon vine-thicket; 15 larvae were collected and reared in captivity, with adults emerging up to 10 months later.

Wanguri, Darwin, NT (12.37308°S, 130.88657°E; WGS84), 29 June 2008, M.F. Braby. One pupal exuvia was recorded on a stem of *Citrus* sp. growing on a nature strip adjacent to a residential garden.

***Papilio demoleus sthenelus* W.S. Macleay, 1826. Chequered Swallowtail.**

Cullen cinereum (Lindl.) J.W. Grimes. (Fabaceae). (not vouchered).

Victoria River crossing, approx. 2 km S of Victoria Hwy, NT (15.63072°S, 131.13261°E; WGS84), 4 April 2010, M.F. Braby & L.J. Aitchison. Several females were observed ovipositing on seedlings of *Cullen cinereum* growing in open dry floodplain near the Victoria River.

PIERIDAE

***Catopsilia pomona* (Fabricius, 1775). Yellow Migrant.**

**Cassia fistula* L. (Fabaceae). (not vouchered).

Eggs and larvae were frequently recorded on *Cassia fistula*, an ornamental tree in suburban areas throughout Darwin, during October to December when the plant produces buds, flowers and new leaf growth during the pre-monsoon period.

Alice Springs, NT (23.700°S, 133.866°E; GDA94), 14 February 2010, M.F. Braby. Six final instar larvae were recorded feeding on new foliage of *C. fistula* growing in the Central Business District.

***Catopsilia scylla etesia* (Hewitson, 1867). Orange Migrant.**

Senna leptoclada (Benth.) Randell. (Fabaceae). (voucher M.F. Braby 69, DNA).

Near Twin Falls, Kakadu National Park, NT (13.26680°S, 132.81320°E; WGS84), 7 November 2009, M.F. Braby & L.J. Aitchison. A female was observed at 1245 hr ovipositing on *Senna leptoclada* (approx. 1.5 m high) growing in woodland on sandy soil; three eggs were laid singly on new soft terminal leaf growth, two of which were collected and reared to adult in captivity.

***Eurema herla* (W.S. Macleay, 1826). Pink Grass-yellow.**

Chamaecrista minosoides (L.) Greene. (Fabaceae). (voucher M.F. Braby 76, DNA).

1.6 km NNW of Pine Creek, NT (13.80997°S, 131.82852°E; WGS84), 1 May 2010, M.F. Braby & L.J. Aitchison. A female was observed at 1445 hr ovipositing on a herb (150–200 mm high) of *Chamaecrista minosoides*, which grew in the ground layer of savannah woodland; two eggs were laid on the upperside of pinnae of separate plants.

***Eurema alitha novaguineensis* Shriôzu & Yata, 1982. Scalloped Grass-yellow.**

Galactia tenuiflora (Willd.) Wight & Arn. (Fabaceae). (vouchers M.F. Braby 32, 33, 55, DNA).

Town Lagoon, Nhulunbuy, Gove Peninsula, NT (12.17805°S, 136.78361°E; WGS84), 27 January 2008, M.F. Braby & L.J. Aitchison. A female was observed at 1140 hr ovipositing on leaves of a trailing creeper of *Galactia tenuiflora*, which grew along the edge of paperbark swamp adjacent to monsoon vine-thicket; numerous additional eggs were also present on leaves of *G. tenuiflora*.

Coolibah Station, Victoria River District, NT (15.58340°S, 130.97647°E; WGS84), 18 March 2008, M.F. Braby & V. Kessner. Females were observed at 1000 hr, 1109 hr and 1110 hr ovipositing on a creeper of *G. tenuiflora*, which grew over rock scree on a sheltered slope in monsoon vine-thicket; all the eggs were laid singly on new soft leaf growth; additional eggs were also present on leaves of the larval food plant.

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 21 February 2009, M.F. Braby & D.A. Young. A female was observed at 1100 hr ovipositing on a leaf of a twiner of *G. tenuiflora*, which grew in eucalypt woodland on a rocky slope of a hill; additional eggs were also present on new leaves; several early instar larvae were also collected on the new leaf growth and reared to adult in captivity; the larvae pupated the following month and emerged as adults five or six days later.

***Eurema hecabe* (Linnaeus, 1758). Large Grass-Yellow.**

Sesbania cannabina (Retz.) Poir. (Fabaceae). (voucher M.F. Braby 72, DNA).

Rapid Creek, Darwin, NT (12.38083°S, 130.86462°E; WGS84), 20 March 2010, M.F. Braby. One late instar larva was recorded on *Sesbania cannabina*, which grew in profusion in a disturbed area along the edge of mangroves; numerous females were also observed alighting on the larval food plant but they did not appear to oviposit. The early stages occurred together with those of *Theclinessthes miskini* (see below).

Breynia cernua (Poir.) Muell.Arg. (Phyllanthaceae). (voucher M.F. Braby 7, DNA).

Eggs and larvae were frequently recorded (and subsequently reared to adult in captivity) on new soft leaf growth of *Breynia cernua* growing in monsoon vine-forest or riparian monsoon forest from many locations, including Darwin, Mary River Park and Fogg Dam Conservation Reserve, usually from November to June (i.e. wet season-early dry season).

***Belenois java tentonia* (Fabricius, 1775). Caper White.**

Capparis umbonata Lindl. (Capparaceae). (voucher M.F. Braby 64, DNA).

Leanyer, Darwin, NT (12.37500°S, 130.89667°E; WGS84), 14 December 2005, M.F. Braby. Several larvae and numerous pupae (approx. 200) were recorded on a small

tree of *Capparis umbonata* growing in parkland, and a series was reared to adult in captivity. The site was revisited on 17 October 2007 and more than 100 late instar larvae and approx. 20 pupae were recorded on the same tree. The tree was subsequently destroyed by Tropical Cyclone Helen on 5 January 2008.

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 20 December 2009, M.F. Braby. Two late instar larvae were recorded on an almost leafless, spiny shrub of *C. umbonata*, which grew on sandy-loam at the base of an escarpment. The larvae were feeding together with those of *Cepora perinale* (see above).

NYPHALIDAE

Danans petilia (Stoll, 1790). Lesser Wanderer.

Cynanchum pedunculatum R.Br. (Apocynaceae). (voucher M.F. Braby 62, DNA).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 21 February 2009, M.F. Braby & D.A. Young. A female was observed around midday depositing a single egg on the underside of a leaf of *Cynanchum pedunculatum* growing in savannah woodland.

Tylophora flexuosa R.Br. (Apocynaceae). (voucher M.F. Braby 63, DNA).

Emma Gorge Resort, El Questro Wilderness Park, WA (15.90753°S, 128.12909°E; WGS84), 17 July 2009, M.F. Braby & L.J. Aitchison. A female was observed at 1130 hr ovipositing on *Tylophora flexuosa* growing on sandstone rock serec in open woodland above Emma Creek; numerous additional eggs and two larvae were also present on the larval food plant.

Euploea corinna (W.S. Macleay, 1826). Common Crow.

Marsdenia viridiflora R.Br. (Apocynaceae). (voucher M.F. Braby 68, DNA).

1 km ENE of Nanguluwur, Nourlangie Rock, Kakadu National Park, NT (12.84375°S, 132.82558°E; WGS84), 20 December 2009, M.F. Braby. A female was observed at 1020 hr depositing a single egg on the underside of a leaf of a vine of *Marsdenia viridiflora*, which grew in woodland at the base of an escarpment; two early instar larvae were also recorded feeding on new soft leaves of *M. viridiflora*.

Secamone elliptica R.Br. (Apocynaceae). (voucher M.F. Braby 74, DNA).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 23 February 2010, M.F. Braby. One mid-instar larva was recorded feeding on a vine of *Secamone elliptica*, which grew around *Capparis sepiaria* in degraded monsoon vine-thicket.

Acraea andromacha andromacha (Fabricius, 1775). Glasswing.

Hybanthus enneaspermus (L.) F.Muell. (Violaceae). (not vouchered).

'Ryala', Noonamah, NT (12.62694°S, 131.09527°E; AGD66), 6 March 2006, M.F. Braby & I. Morris. Numerous final instar larvae (>20) were recorded feeding on *Hybanthus enneaspermus* growing in woodland; larvae were noted to feed singly or in small groups.

**Passiflora foetida* L. (Passifloraceae). (voucher M.F. Braby 88, DNA).

Nanguluwur Art site, Nourlangie Rock, Kakadu National Park, NT (12.84262°S, 132.81895°E; WGS84), 13 November 2010, M.F. Braby & J. Westaway. A female was observed at 1145 hr ovipositing on *Passiflora foetida* growing in profusion over footslope sandstone boulders; a cluster of four eggs was laid on the underside of a new leaf.

Junonia orithya albicincta Butler, 1875. Blue Argus.

Buchnera linearis R.Br. (Orobanchaceae). (voucher M.F. Braby 39, DNA).

Education campground, Litehfield National Park, NT (13.11361°S, 130.79805°E; WGS84), 17 April 2006, M.F. Braby & L.J. Aitchison. Two final instar larvae were recorded on *Buchnera linearis*, a herb growing in savannah woodland.

Nawurlandja (Little Nourlangie Rock), Kakadu National Park, NT (12.85701°S, 132.79053°E; WGS84), 19 April 2008, M.F. Braby & K. Nishida. Two larvae were recorded on *B. linearis* growing close to a creek near the car park.

Maguk Plunge Pool (Barramundie Gorge), Kakadu National Park, NT (13.31841°S, 132.43828°E; WGS84), 30 August 2008, M.F. Braby & L.J. Aitchison. A female was observed at 1245 hr ovipositing on *B. linearis* growing in moist sand near the edge of a large pool of water.

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 28 February 2009, M.F. Braby. A single larva was recorded on *B. linearis* growing in savannah woodland.

Pseuderanthemum variabile (R.Br.) Radlk. (Acanthaceae). (voucher M.F. Braby 87, DNA).

Nanguluwur Art site, Nourlangie Rock, Kakadu National Park, NT (12.84262°S, 132.81895°E; WGS84), 27 November 2010, M.F. Braby. Eggs and three final instar larvae were recorded on *Pseuderanthemum variabile* growing in the ground layer in savannah woodland; two larvae were collected and reared to adult in captivity.

Junonia hedonia zelima (Fabricius, 1775). Chocolate Argus.

Hygrophila angustifolia R.Br. (Acanthaceae). (voucher M.F. Braby 38, DNA).

Howard Springs Nature Reserve, NT (12.45240°S, 131.05347°E; WGS84), 8 and 24 March 2008, M.F. Braby. A female was observed during early afternoon ovipositing on *Hygrophila angustifolia* (and on adjacent objects), a herb growing in paperbark-pandanus swamp adjacent to wet evergreen monsoon vine-forest; one early instar larva and one final instar larva were also recorded feeding on *H. angustifolia*.

Fogg Dam Conservation Reserve, NT (12.55769°S, 131.29701°E; WGS84), 29 May 2010, M.F. Braby, S. Keates & D. Bisa. A female was observed at 1145 hr ovipositing on *H. angustifolia*, as well as on adjacent objects, including a dead twig of an *Acacia* sp. sapling and dead dry leaves of grass, in mixed paperbark swampland adjacent to monsoon vine-forest.

***Hypolimnas bolina neriua* (Fabricius, 1775). Varied Eggfly.**

**Synedrella nodiflora* (L.) Gaertn. (Asteraceae). (voucher M.F. Braby 71, DNA).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 23 March 2010, M.F. Braby. Two females were observed at 1245–1255 hr ovipositing on *Synedrella nodiflora*, a herb growing in shade beneath a large African Mahogany tree; all eggs were laid singly on the underside of leaves. The site was revisited on 24 March 2010 by M.F. Braby & S. Keates and a female was observed at 1240–1250 hr ovipositing on introduced *Tridax procumbens* (Asteraceae), as well as a species of grass on which a cluster of five eggs were laid on the underside of a blade. Since both plants were growing amongst numerous herbs of *S. nodiflora*, the suitability of these species as larval food plants requires confirmation. On 7 April 2010 one late instar larva was collected from the ground underneath *S. nodiflora* and reared to adult in captivity on this food plant.

***Melanitis leda bankia* (Fabricius, 1775). Evening Brown.**

Imperata cylindrica (L.) Rcauseh. (Poaceae). (not vouchered).

Nathan River Ranger Station, Limmen National Park, NT (15.57681°S, 135.42783°E; WGS84), 12 May 2009, M.F. Braby & N. Collicr. Numerous larvae and several pupae (mostly diseased) were recorded on *Imperata cylindrica*, as well as on introduced *Cynodon radiatus* (Poaceae) (see above), growing along the bank of a river.

LYCAENIDAE

***Ogyris oroetes oroetes* (Hewitson, 1862). Silky Azure.**

Amyema bifurcata (Benth.) Tiegh. (Loranthaceae). (not vouchered).

Cookatoo Lagoon, Keep River National Park, NT (15.96950°S, 129.04099°E; WGS84), 1 February 2008, M.F. Braby. One pupa was collected from under the bark of a eucalypt host tree supporting several clumps of the mistletoe *Amyema bifurcata* growing in the canopy; a male was also netted perched in the canopy of the host tree.

Victoria Hwy, approx. 35 km E of Kununurra, WA (15.96229°S, 128.96069°E; WGS84), 6 July 2009, M.F. Braby. One pupa was collected (and reared to adult in captivity) from under loose bark at the base of the host tree *Corymbia grandifolia* (R.Br. ex Benth.) K.D.Hill & L.A.S.Johnson, which supported numerous clumps of *A. bifurcata*, growing in savannah woodland on a sandplain.

The pupa was found together with a cohort of *O. zosine* larvae, which were attended by sugar ants, *Camponotus* sp. (*humilior* species group).

***Ogyris oroetes apiculata* (Quick, 1972). Silky Azure.**

Amyema bifurcata (Benth.) Tiegh. (Loranthaceae). (not vouchered).

Larapinta Drive, NNE of Kings Canyon, NT (23.99472°S, 131.48583°E; WGS84), 12 October 2005, M.F. Braby & L.J. Aitchison. One mid-instar larva was collected (and reared to adult in captivity) from a mallee eucalypt host tree supporting clumps of the mistletoe *Amyema bifurcata*. The larva was found together with a cohort of *O. amaryllis meridionalis* larvae.

Amyema miquelii (Lam. ex Miq.) Tiegh. (Loranthaceae). (not vouchered).

6 km S of Hermannsburg, NT (23.99111°S, 132.77555°E; WGS84), 14 October 2005, M.F. Braby & L.J. Aitchison. One late instar larva and one prepupa were collected (and reared to adult in captivity) from loose bark at the base of the host tree *Eucalyptus camaldulensis* Dehnh., which supported clumps of the mistletoe *Amyema miquelii*, growing along the Finke River; the larva was attended by three ants, *Crematogaster* sp. (*longiceps* species group).

Trephina Gorge National Park, East Macdonnell Ranges, NT (23.52805°S, 134.38000°E; WGS84), 30 April 2006, M.F. Braby. Ten larvae in various instars were collected (and reared to adult in captivity) from a mallee eucalypt supporting clumps of the *A. miquelii*; a few larvae were attended by ants, *Crematogaster* sp. (*longiceps* species group); larvae were polymorphic in colour, varying from green, through pale green-brown and pale brown, to dark brown.

Luritja Road, 30 km N of Lasseter Hwy, NT (24.93221°S, 132.27826°E; WGS84), 16 August 2010, M.F. Braby. One mid-instar larva was collected from under loose bark of a mallee eucalypt host tree supporting numerous clumps of *A. miquelii*; the larva was not attended by ants. Several adult males were collected during the afternoon as they settled on dead branches in the canopy of the breeding trees where they appeared to be defending encounter sites to detect receptive females.

***Ogyris amaryllis meridionalis* (Bethune-Baker, 1905). Satin Azure.**

Amyema miquelii (Lam. ex Miq.) Tiegh. (Loranthaceae). (not vouchered).

Trephina Gorge National Park, East Macdonnell Ranges, NT (23.52805°S, 134.38000°E; WGS84), 30 April 2006, M.F. Braby. One final instar larva was collected (and reared to adult in captivity) from a mallee eucalypt host tree supporting the mistletoe *Amyema miquelii* growing adjacent to a breeding colony of *O. oroetes* (see above).

***Ogyris zosine* (Hewitson, [1853]). Northern Purple Azure.**

Amyema bifurcata (Benth.) Tiegh. (Loranthaceae). (not vouchered).

Mary River Billabong, Mary River National Park, NT (12.89245°S, 131.63890°E; WGS84), 19 July 2008, M.F. Braby & S. Keates. A female was observed at 1500–1515 hr ovipositing on the host tree *Corymbia bella* supporting a small clump of the mistletoe *Amyema bifurcata* growing in the canopy (approx. 8 m from ground level) in savannah woodland; eggs were laid on patches of rough bark of the trunk below the mistletoe clump. The site was revisited the following week and six recently hatched egg shells were collected; no attendant ants were present on the host tree.

Ebony Creek, Limmen National Park, NT (16.35714°S, 135.69812°E; WGS84), 11 May 2009, M.F. Braby & N. Collier. A cohort of nine larvae in various instars and one pupa were collected (and reared to adult in captivity) from soil at the base of the trunk of the host tree *Corymbia grandifolia* supporting two clumps of *A. bifurcata* in savannah woodland; the early stages were attended by numerous sugar ants, *Camponotus* sp. (*humilior* species group).

Amyema sanguinea (F.Muell.) Danser. (Loranthaceae). (voucher M.F. Braby 81, DNA).

Limbunya Station, Victoria River District, NT (17.30592°S, 129.77728°E; WGS84), 24 July 2010, M.F. Braby, V. Kessner & T. Parkin. A cohort comprising 13 early to mid-instar larvae and one final instar larva was collected (and reared to adult in captivity) from under a small rock at the base of a *Corymbia* sp. host tree, which supported a single clump of the mistletoe *Amyema sanguinea* growing near the canopy (approx. 7 m from ground level) in woodland on a steep mixed limestone outcrop; the larvae were attended by numerous pale brown sugar ants *Camponotus* sp. (*humilior* species group). Of eight females reared to adult in captivity, four had the basal areas on the upperside of the wings bright purple, while the remaining four were bright blue.

Limbunya Station, Victoria River District, NT (17.55211°S, 130.07086°E; WGS84), 25 July 2010, M.F. Braby. One pupa was collected from the base of a small *Corymbia* sp. host tree, which supported three clumps of *A. sanguinea*, growing in eucalypt open woodland with a ground layer of *Triodia* sp.; the pupa was attended by five sugar ants, *Camponotus* sp. (*crozieri* species group), a darker brown species compared with *Camponotus* sp. (*humilior* species group).

Buntine Hwy, 31 km SW of Top Springs, NT (16.75994°S, 131.61429°E; WGS84), 28 July 2010, M.F. Braby. A cohort of 10 larvae was found at the base of a eucalypt host tree supporting a large clump of *A. sanguinea* growing 1.5 m above ground level; most larvae were parasitised by braconid wasps and only two pre-pupae, which were attended by several sugar ants, *Camponotus*

sp. (*novae-hollandiae* species group), were not parasitised and reared to adult in captivity.

***Antheus seltmanni affinis* (Waterhouse & R.E. Turner, 1905). Dark Ciliate-blue.**

Cupaniopsis anarcardioides (A.Rich.) Radlk. (Sapindaceae). (not vouchered).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 18 December 2010, M.F. Braby & J. Westaway. Five larvae in various instars were recorded feeding on soft new leaf growth of *Cupaniopsis anarcardioides*; larvae were attended by *Oecophylla smaragdina* ants.

***Candalides erinus erinus* (Fabricius, 1775). Small Dusky-blue.**

Cassytha capillaris Meisn. (Lauraceae). (voucher M.F. Braby 34, DNA).

Jinumum Gorge, Keep River National Park, NT (15.83376°S, 129.11018°E; WGS84), 2 and 4 February 2008, M.F. Braby & V. Kessner. A female was observed at 1005 hr depositing a single egg on a flower bud of *Cassytha capillaris* parasitising grass growing in savannah woodland on sandy loam on a gentle slope adjacent to a gorge; three larvae were also collected from new growth of the larval food plant and reared to adult in captivity; one of these larvae was attended by a small black ant, *Iridomyrmex* sp. (*matiroloi* species group), and everted its eversible organs in presence of the ant. The site was revisited on 20 March 2008 and a female was observed at 1048 hr ovipositing two eggs on flower buds of the food plant; two larvae and one pupa, neither of which were attended by ants, were also collected from *C. capillaris* and reared to adult in captivity. Overall, the larvae were polymorphic in colour, varying from green, through pale green-brown and pale brown, to dark brown. The early stages were found together with those of *Candalides delospila* (see below).

Joe Creek, Gregory (Jutpurra) National Park, NT (15.59754°S, 131.07042°E; WGS84), 16 March 2008, M.F. Braby. One mid-instar larva, which was not attended by ants, was recorded on *C. capillaris*.

Seenie Lookout, Timber Creek, NT (15.64580°S, 130.45827°E; WGS84), 18 March 2008, M.F. Braby. A female was observed at 1455 hr depositing a single egg on a young tendril of *C. capillaris* parasitising *Triodia* sp. (Poaceae) growing in eucalypt woodland on sandstone; one late instar larva, which was not attended by ants, was also collected feeding openly on *C. capillaris* and it was reared to adult in captivity.

Amalia Gorge, El Questro Wilderness Park, WA (15.98124°S, 128.03708°E; WGS84), 2 April 2010, M.F. Braby & L.J. Aitchison. One final instar larva, which was not attended by ants, was collected from *C. capillaris* parasitising *Triodia* sp. growing on a lower slope of the gorge with a north facing aspect and it was reared to adult in captivity.

***Candalides delospila* (Waterhouse, 1903). Spotted Dusky-blue.**

Cassytha capillaris Meisn. (Lauraceae). (vouchers M.F. Braby 28, 034, DNA).

The early stages were frequently recorded (and subsequently reared to adult in captivity) on *Cassytha capillaris* parasitising *Triodia* spp. and other grasses growing in open woodland on rocky sandstone plateaux or on sandy loam from many sites in Gregory (Jutpurra) and Keep River National Parks, NT, during visits in February, March and July 2007 and 2008. Eggs were collected from, and females were observed ovipositing on, new growth of *C. capillaris*; all eggs were laid singly; larvae were found at rest or feeding openly on *C. capillaris* during the day (i.e. they were not concealed amongst clumps of the host grass); most larvae were not attended by ants, but one was attended by a single black ant, *Iridomyrmex* sp. (*gracilis* species group); pupae were collected from stems of the host plant *Triodia* sp. around which the larval food plant grew. The larvae were polymorphic in colour, varying from green, through pale green-brown and pale brown, to dark brown. At Keep River, the early stages were found together with those of *Candalides erinus* (see above). At all other sites where *Candalides delospila* was recorded (e.g. Limbunya Station, Riveren Station, Timber Creek, Jasper Gorge, near Elliott, NT; Picaninny Creek Purnululu National Park, WA) adults flew in close proximity of *C. capillaris*.

***Prosotas dubiosa dubiosa* (Semper, [1879]). Purple Line-blue.**

Acacia auriculiformis A.Cunn. ex Benth. (Fabaceae). (not vouchered).

East Point, Darwin, NT (12.41140°S, 130.82500°E; WGS84), 1 April 2006, M.F. Braby. A female was observed at 1500 hr ovipositing on flower buds of *Acacia auriculiformis* growing in coastal semi-deciduous monsoon vine-thicket.

***Theclinsthes miskini miskini* (T.P. Lucas, 1889). Wattle Blue.**

Acacia holosericea A.Cunn. ex G.Don. (Fabaceae). (not vouchered).

The early stages were frequently recorded on *Acacia holosericea* growing in a variety of woodland habitats from many locations, including Channel Island, Beatrice Hill, near Black Point Cobourg Peninsula, Muirella Park Kakadu National Park, NT, and the Pentecost River El Questro Wilderness Park, WA. The early stages were usually attended by meat ants, *Iridomyrmex reburrus*, or sometimes small black ants, *Iridomyrmex* sp. (*unattiroloi* species group), or medium-sized black ants, *Iridomyrmex* sp. (*auceps* species group).

Atalaya variifolia F.Muell. ex Benth. (Sapindaceae). (voucher M.F. Braby 30, DNA).

Victoria Hwy, Pinkerton Range, NT (15.98698°S, 129.51213°E; WGS84), 1 February 2008, M.F. Braby & V. Kessner. A female was observed ovipositing on a sapling of

Atalaya variifolia (approx. 1.5 m high) growing in savannah woodland on a sandstone outcrop; about 40 additional eggs were also present on new soft terminal growth of *A. variifolia*; numerous meat ants, *Iridomyrmex* sp., were present on the food plant.

Bullita Rd, 11 km SSE of Timber Creek, NT (15.75712°S, 130.51135°E; WGS84), 10 December 2008, M.F. Braby & V. Kessner. Numerous larvae and pupae were recorded on *A. variifolia* growing in savannah woodland; the early stages were attended by small black ants, *Iridomyrmex* sp. (*minor* species group).

Sesbania cannabina (Retz.) Poir. (Fabaceae). (voucher M.F. Braby 72, DNA).

Rapid Creek, Darwin, NT (12.38083°S, 130.86462°E; WGS84), 20 March 2010, M.F. Braby. Numerous females were observed ovipositing on new leaf growth of *Sesbania cannabina* growing in a disturbed area along the edge of mangroves adjacent to Rapid Creek. The early stages were found together with those of *Eurema hecabe* (see above).

***Jamides phaseli* (Mathew, 1889). Purple Cerulean.**

Canavalia rosea (Sw.) DC. (Fabaceae). (not vouchered).

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 28 May 2009, M.F. Braby. A female was observed at 1340 hr ovipositing on flower buds of *Canavalia rosea*, which grew amongst *Ipomea pes-caprae* (Convolvulaceae) in coastal sand dunes adjacent to mangroves; three larvae were also recorded feeding inside flower buds and flowers of *C. rosea*.

***Zizeeria karsandra* (Moore, 1865). Spotted Grass-blue.**

Tribulus cistoides L. (Zygophyllaceae). (voucher M.F. Braby 20, DNA).

Gunn Point, NT (12.22833°S, 131.03000°E; WGS84), 10 December 2006, M.F. Braby. All stages were recorded on the underside of leaflets of *Tribulus cistoides* growing in coastal open beach shrubland above high tide mark; the larvae were not attended by ants; two pupae were reared to adult in captivity.

5.1 km ENE of Black Point, Cobourg Peninsula, NT (11.14695°S, 132.19014°E; WGS84), 23 April 2008, M.F. Braby & K. Nishida. A female was observed at 1230 hr ovipositing on the underside of leaflets of *T. cistoides* growing in beach sand along the edge of coastal semi-deciduous monsoon vine-thicket; several larvae were also recorded on the underside of foliage of *T. cistoides*.

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 25 May 2010, M.F. Braby. Eggs and one early instar larva were recorded on the underside of leaflets of *T. cistoides* growing in profusion on beach sand. The site was revisited on 11 June 2010 and a female was observed at 1230 hr ovipositing on *T. cistoides*. On 1 September 2010, a mid-instar larva was collected from the underside of leaves of *T. cistoides* and reared to adult in captivity.

Euchrysops cnejus cnidus Waterhouse & Lyell, 1914.
Spotted Pea-blue.

Vigna vexillata (L.) A.Rich. (Fabaceae). (voucher M.F. Braby 52, DNA).

Mt Burrell, Tipperary Station, Daly River district, NT (13.49623°S, 131.03572°E; WGS84), 11 April 2009, M.F. Braby & L.J. Aitchison. A female was observed at 1045 hr ovipositing on *Vigna vexillata* growing in a dry gully at the base of a hill; adults were common around *V. vexillata*.

**Macropitium atropurpureum* (DC.) Urb. (Fabaceae).

Buffalo Creek, Lee Point, NT (12.33639°S, 130.90389°E; WGS84), 16 August 2008, M.F. Braby. A female was observed ovipositing on a low-spreading vine of *Macropitium atropurpureum*, which grew in a paperbark swamp; additional eggs were also present on flower buds of this introduced plant.

Bullocky Point, Darwin, NT (12.43777°S, 130.83377°E; WGS84), 23 June 2010, M.F. Braby. Females were observed at 1230 hr ovipositing on *M. atropurpureum* growing on a beach cliff; numerous additional eggs were collected from leaves, new soft stems and flower buds; two early instar larvae were also collected from *M. atropurpureum*, feeding on flowers or developing pods, and were reared to adult in captivity.

DISCUSSION

In total, 122 insect-plant associations are documented, of which 76 are new for Australia and 46 are new for the NT and/or WA. Of particular note are the first recordings of two plant families for two lycaenid species: the Lecythidaceae is recorded for the genus *Anthene*, and the Santalaceae is recorded for the genus *Theclineslthes*. New ant associations are also recorded for the larvae and/or pupae of several lycaenids, notably of *Ogyris zosine* and *Theclineslthes niskini*. In addition, new larval food plant associations are reported for six species of agaristines (*Cruria tropica*, *Idalina aethrias*, *I. leonora*, *Periopta ardescens*, *P. diversa*, *Radnocera vaga*) for which the life histories have not previously been documented. The final instar larvae of these six species are illustrated for the first time in Figs 3–8. Several food plant records are based only on oviposition behaviour of females, and further observations may be required to determine their suitability. In my experience, however, females rarely make mistakes when ovipositing, and usually when they oviposit on ‘new’ food plants those species belong to plant families that are well-known to be exploited and the larvae are able to feed and develop to adulthood on these plants in captivity.

An association of the aposematic diurnal moth *Birhana cleis* with the Loranthaceae has only recently been established, and in the Darwin area it breeds commonly on *Decaisnina signata* (Anderson & Braby 2009; M.F. Braby unpublished data). *Decaisnina* is distantly related to *Dendrophthoe* (Vidal-Russel & Nickrent 2008), the new

food plant recorded from north-eastern Arnhem Land, suggesting that the host range of this immid may be considerably wider than available data indicates. A broad host range within the Loranthaceae may also occur in *Delias argenthona*, which in the Top End was previously known to be associated only with *Decaisnina signata* in the Darwin area (Wade 1978; Meyer 1996; Anderson & Braby 2009).

In the NT, *Borbo impar* has been recorded only from a limited number of locations at and near Darwin, but the native larval food plant and natural breeding habitat have up until now remained unknown. All previous food plant associations (Meyer 1997b) comprise naturalised grasses from Africa that grow commonly in suburban areas of Darwin. The occurrence of *B. impar* in the floodplains of the South Alligator River suggests that the hesperiid is a specialist of lowland floodplains and was possibly formerly restricted to that habitat, but following European settlement has colonised non-natural areas through its ability to utilise introduced grasses.

The native larval food plants of *Taractrocera ina* have also not previously been recorded; all known food plants comprise introduced or naturalised grasses (Braby 2000). The introduced *Paspalum conjugatum* has been previously recorded as a larval food plant for the species from central Qld (De Baar 1979), but not from the NT. Atkins (1975) observed a female *Taractrocera* sp. lay an egg on Buffel Grass *Cenchrus ciliaris* in the Gogango Ranges, Queensland, and considered the species to be *T. anisomorpha* based on the presence of males in the immediate vicinity. Atkins (1991) subsequently recorded the native *Eulalia aurea* as the main food plant for this hesperiid in the Alice Springs area.

Telicota colon is the only grass-feeding member of the genus represented in the Kimberley and Top End, the other species, *T. augias* (Linnaeus, 1763), specialises on *Flagellaria indica* (Flagellariaceae) (Meyer 1996). The two other species of *Telicota* reported from the Northern Territory, *T. mesoptis* Lower, 1911 and *T. ancilla* (Herrich-Schäffer, 1869), appear to be erroneous (Braby 2008a; M.F. Braby unpublished data).

The native larval food plant and natural breeding habitat *Cephenes angiaades* ssp. ‘Top End’, which is endemic to the NT, have not previously been recorded, and there are few records outside Darwin. The natural habitat of this species comprises riparian evergreen monsoon vine-forest, but the species often breeds on cultivated palms in suburban areas of Darwin, an artificial habitat which it has no doubt invaded in recent decades following the extensive cultivation of palms in gardens and parklands since Tropical Cyclone Tracy. Dunn (1996) listed *Carpentaria acuminata*, which is endemic to the Top End, as a food plant for *Cephenes angiaades*, but this was based on the presence of early stages of the eastern form utilising cultivars in the Mount Coot-tha Botanic Gardens, Brisbane, Qld.

Dunn (1996) listed *Livistona mariae* as a food plant for *Cephenes trichopepla* based on observations of a single larva in the Mount Coot-tha Botanic Gardens, Brisbane;

however, the natural utilisation of this palm, which is restricted to the West McDonnell Ranges, has not been confirmed until now. Dunn (2009) also observed two mature larvae of this hesperiid in shelters on a species of *Livistona* at Cahills Crossing, and this record almost certainly refers to *L. benthamii*.

Papilio aegaeus has become established on the mainland in north-eastern Arnhem Land only in the last decade since about 2000 (L. Wilson pers. comm.). Previously, *P. aegaeus* was restricted to Groote Eylandt and Marehinar Island in the Wessel Islands where it breeds on *Micromelum minutum* (G.Forst.) Wight & Arn. (Rutaceae) (Fenner 1991). The usual larval food plants for *Papilio fuscus* in the Top End are *M. minutum* and *Glycosmis trifoliata* (Blume) Spreng. (Rutaceae) (Hall 1976; Meyer 1996). Cultivated *Citrus* sp. has previously been recorded for this species from the eastern Kimberley at Kununurra, WA (Common & Waterhouse 1981).

Meyer (1996) listed *Senna leptoclada* as a larval food plant of *Catopsilia scylla* in the Kununurra district of the eastern Kimberley, WA, but it has not previously been recorded as a food plant from the NT. Moss (2008) recently reviewed and updated the larval food plants for *Eurema alitha* in Queensland and noted that *Galactia tenuiflora* and *G. muelleri* are the preferred legumes compared with *Glycine tabacina*, the previously known food plant. The larval food plant in the Top End, however, has not previously been reported.

In the NT, *Elodina padusa* appears to be parapatric with *E. walkeri* Butler, 1898, which occurs predominantly in the higher rainfall areas of the monsoon tropics where it specialises on *Capparis sepiaria*, whereas *E. padusa* occurs mainly in the arid zone. The two species have a narrow range of overlap in the drier semi-arid inland areas of the monsoon tropics, but it is not known if they share the same larval food plants in this region. Available data suggests they may exploit different species of *Capparis*.

The usual food plant of *Appias paulina* in the Top End is *Drypetes deplanchei* (Brongn. & Griseb.) Merr. (Putranjivaceae) (Meyer 1996; Braby *et al.* 2010). The butterfly is known to utilise *Capparis* spp. in eastern Australia (Braby 2000) and elsewhere within its geographical range. The extent to which *A. paulina* uses *Capparis* in the NT is not known, but is possibly infrequent.

The usual larval food plant of *Euploea alcaethoe* in north-eastern Arnhem Land is *Parsonia alboflavescens* (Braby 2009), but it appears that occasionally larvae of *E. corinna* and *E. sylvester* also feed on this vine. The usual larval food plant of *E. sylvester* is *Marsdenia geminata* (Meyer 1997a), which is widespread across the Top End, but the extent to which *E. corinna* uses this vine is not known.

Grund and Hunt (2001) recorded the introduced weed *Passiflora foetida* as a larval food plant for *Acræa andromacha* in the northern Kimberley, WA, where females were observed to lay large batches of eggs on it in the

Kalumburu area, but it has not previously been reported as a food plant from the Top End.

Hypochoeris apelles in the Top End is restricted to mangrove communities where the usual larval food plant near Darwin is *Lumnitzera racemosa* Willd. (Combretaceae) (Meyer 1996; Eastwood *et al.* 2008), which typically grows along the landward edge of the habitat. Despite the presence of many other species of mangroves, which are utilised as food plants elsewhere in the geographical range of *H. apelles* in eastern Queensland, these plants do not seem to be utilised in the Northern Territory. However, at Buffalo Creek in the early dry season when the species is particularly abundant, larvae of *H. apelles* were found to be associated mainly with *L. racemosa* and less frequently with *Ceriops australis*, whereas later in the dry season (May–September) larvae were found only on *L. racemosa*. These observations suggest that species of mangroves other than *L. racemosa* are exploited but only during periods of high population densities.

Reared adults of *Ogyris oroetes* from the eastern Kimberley and other material collected elsewhere in the Top End are similar to specimens from northern Queensland in that the males have narrow black margins and the upperside ground colour iridescent pale lilac, and are better placed with the nominate subspecies than with the ‘arid form’ proposed by Braby (2000). However, reared adults and material collected from central Australia are similar to specimens from southern Australia in that the males have a broad black apex of the fore wing. In many respects they resemble *O. oroetes apiculata* (Quick, 1972) described from Western Australia, except that the upperside ground colour is iridescent dark lilac or purple, rather than blue as in the type specimen. However, the holotype appears to be aberrant or not representative of populations elsewhere in southern Australia in which the males are typically dark lilac. Specimens from central Australia are therefore provisionally placed with *O. oroetes apiculata* rather than with the ‘arid form’ proposed by Braby (2000).

The usual food plant for *Ogyris amaryllis* in the central arid zone appears to be *Anyema maidenii*, which often parasitises *Acacia aneura* F.Muell. ex Benth. (see also Grund 2005), but several other species have now been recorded, viz: *Anyema miquelii*, *Anyema bifurcata* and *Diplatia grandibractea*. In addition, *Anyema sanguinea* has been recorded as a larval food plant in the Schwerin Mural Crescent, WA (M.F. Braby & J.J. Armstrong unpublished data). The extent to which these four other mistletoes are utilised in central Australia is not well understood.

In the Northern Territory, the purple morph of female *Ogyris zosine* has only rarely been recorded, the blue phenotype being the predominant morph. Le Souëf (1971) listed the species from Elliott, and examination of his material (reared to adult in October 1969) in the ANIC revealed that two of the three female specimens collected are bright purple above. Elliott is located at similar latitude to the sites further west at Limbunya Station, both locations being situated in semi-arid areas at

the southern boundary of the monsoon tropics biome. More recently, Weir *et al.* (2011) recorded the purple morph from a population in suburban coastal Darwin in which five females (18%) from a sample of 28 pupae reared during the wet season (December) were of the purple phenotype. Weir *et al.* (2011) suggested that female polymorphism in this species may be influenced by environmental factors, such as humidity (with high humidity promoting the purple morph); however, the purple morphs from Limbunya were reared to adult during the late dry season (August to September) when conditions were comparatively cool and dry. These observations suggest that phenotypic variation in *O. zosime* may be under genetic control but the allele for the femal purple morph occurs in low frequency.

The usual food plant of *Hypolycaena phorbas* in the Top End is *Clerodendrum floribundum* R.Br. (Lamiaceae), but larvae have also been recorded on *Smilax australis* R.Br. (Smilacaceae) (Meyer 1996). Elsewhere, the butterfly is associated with a wide range of plant families (Braby 2000), but rarely has it been recorded from mistletoes (Valentine & Johnson 1988).

The only larval food plant previously recorded for *Candalides margarita* in northern Australia is *Decaisnina signata* (Loranthaceae) (Samson & Wilson 1995; Braby 2008b); however, given that the geographical distribution of the butterfly is wider than that of this mistletoe, other food plants are expected to be utilised. Therefore, the new record for *D. triflora* as a host plant is not unexpected.

In an earlier publication (Braby 1995), I listed *Cassytha pubescens* R.Br. as the larval food plant for *Candalides geminus* in sandstone habitats on the Burra Range, Qld, but this record is incorrect and refers to *Cassytha filiformis*. In that same publication (Braby 1995) I listed *Cassytha filiformis* as the larval food plant for *Candalides delospila* from the Burra Range, Qld; however, this record is also in error and refers to *Cassytha capillaris*. In another publication (Braby 1997), I listed *Cassytha pubescens* as a larval food plant for *Candalides erinus* based on records from several localities in northern Queensland; however, these records also refer to *Cassytha filiformis*. All of these determinations of *Cassytha* species were made prior to the monograph of Weber (2007), which explains the misidentifications. The usual food plant of *Candalides erinus* in the Northern Territory is *Cassytha filiformis* (M.F. Braby, unpublished data), but in the drier semi-arid areas of the Top End the butterfly was occasionally found breeding on *Cassytha capillaris*, which grows as a finer, less vigorous hemiparasitic vine on *Triodia* spp. and other grasses on sandstone or sandy soils. *Candalides delospila* is endemic to the monsoon tropics (Braby 2008a) where it appears to be ecologically specialised on *Cassytha capillaris*, which likewise is restricted to northern Australia. Grund & Hunt (2001) recorded *Cassytha capillaris* as a larval food plant for both *Candalides erinus* and *Candalides delospila* in the Tanami Desert at the Northern Territory-Western Australian border.

Facultative ant associations are here recorded for the larvae of *Candalides erinus* and *C. delospila*, two species not previously known to associate with ants, and these records add to the growing list of ant-butterfly associations among the Australian Lyeaenidae (Eastwood & Fraser 1999; Eastwood *et al.* 2008).

The usual food plants of *Nesolycaena urumelia* in the Top End are *Boronia lanceolata* F.Muell. in western Arnhem Land and areas closer to Darwin (Edwards 1980; Meyer 1996) and *B. lamiginosa* Endl. in subcoastal heathy woodland on sand in Gove Peninsula and Elcho Island (Braby 2000; M.F. Braby, unpublished data), but in the drier rocky areas of western Arnhem Land, the butterfly was found breeding on both *B. laxa* and *B. lanceolata*.

Meyer & Wilson (1995) listed *Tecticornia indica* (Willd) K.A.Sheph. & Paul G.Wilson as one of two larval food plants for *Theclinesstes sulphitins* in the Top End based on observations near Darwin. Although this saltbush grew together with *Tecticornia halocnemoides* at the site near Palmerston, neither eggs nor larvae were present on *Tecticornia indica*.

The Mistletoe Day-moth *Comocrus beluri* has not previously been recorded from the Northern Territory, although there is a small series of adults in the Museum and Art Gallery of the Northern Territory from Alice Springs collected by I. Arehibald. This species is widespread and abundant in the temperate areas of south-eastern Australia, but it appears to be rare and seasonal in the Top End.

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